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A Shift in Power

Who cares about Moore's Law anymore? Members of the GigaHertz club are hard pressed to justify an upgrade based on processor speed alone. Gaming you say? Already you can get on your desktop, enough muscle to render the movie *Toy Story* in real-time—a task that took the original creators weeks of hard, painstaking work. What game can do better than movie quality? There will always be some applications to squeeze the last bit of processing power they can get. But are there any for you? The switch from 8 to 16-bit, and 16 to 32-bit happened so quickly, you simply couldn't buy future proof hardware. There are still no takers for the 64-bit Itanium.

Things couldn't be better for the computer industry.

Raw power does not cut it any more. Computers must sell on how well the software they support can serve your needs. After the straight charge to speed, it is now time to refocus on where else computers can go, and what else they can do.

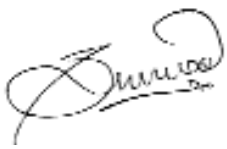
Down this road lies tremendous opportunity. What could you do with a computer that runs solely on ambient light? How about tiny computers with human-size interface devices? How about computers as cheap as ballpoint pens? All of this is happening already. The path to growth is not a straight climb up the charts of processor speeds, but the breadth of variety in applications and availability.

The drive to lower costs for great hardware is clearly successful. The average cost for a decent PC has fallen from Rs 40,000 to near the Rs 20,000 mark. A 'computer for the masses' must cost less than Rs 5,000. We are getting there.

The transition from the mind-set of big, powerful hardware to computers that are 'good enough', go everywhere you need them and do things you want, is an inflection point manufacturers must cross. Those that do, will win big. The recent launch of multiple new low-power processors proves that some companies are sitting up and paying attention.

The confluence of 'good enough' processing with low cost, compact computing in recent times brought us the PDA and the portable MP3 player. It's not risking much to predict the next big thing will not be the launch of a new processor, or a fancy new graphics card-it will be something that brings a new level of convenience at an affordable price point.

In the meanwhile, let us rejoice in the relentless progress of power.



Sumod_hajela@jasubhai.com



Sumod Hajela
Assistant Editor

"The transition from the mind-set of big, powerful hardware to computers that are 'good enough', go everywhere you need them and do things you want, is an inflection point manufacturers must cross."

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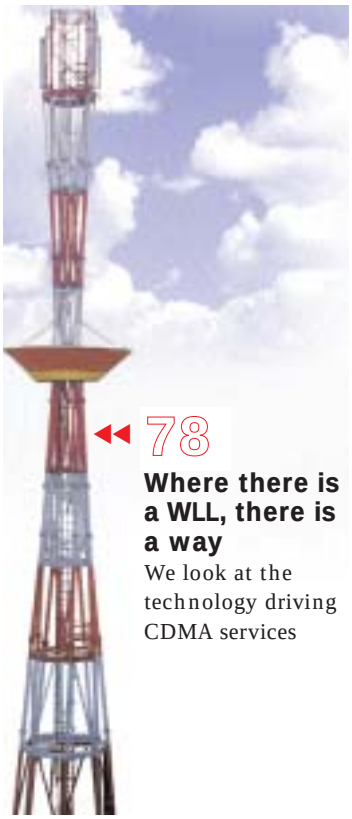
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The Great Indian Phone Bazaar
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BackUp MyPC 4.85
Size: 8.04 MB Type: Trial
Mindware\Software\System

Casino Inc
Size: 114 MB Type: Trial
Playware\Arena\Games

Frzzic's Revenge
Size: 5.56 MB Type: Trial
Playware \Arena\Funzone

3D Ground Zero
Size: 7.53 MB Type: Free
Playware \Arena\Funzone

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Size 7.67 MB Type: Trial
Mindware\Software\Home

Pro Race Driver
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Size: 16.2 MB Type: Trial
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Size: 4.40 MB Type: Trial
Mindware\Software\ DeveloperTools

Steganos Internet Privacy 2.12
Size: 5.22 MB Type: Free
Mindware\Software\Internet

VCDEasy 1.1.5
Size: 9.6 MB Type: Free
Mindware\Software\Multimedia

ViaPrint Professional 4.0
Size: 7.16 MB Type: Trial
Mindware\Software\Office





KNOW YOUR CD

MINDWARE\RESOLVE



The Resolve section on the Digit Mindware CD brings you some very interesting reading with Whitepapers, Tips and Tricks and FAQs. The Whitepapers section brings you a selection of whitepapers on a subject of interest along with a short description of each whitepaper. This month we feature five whitepapers on Quantum Computing, and the various disciplines within the field.

This month, the Tips and Tricks section contains several tips to get your home network running smoothly. In tune with the cell phones test, the FAQs section deals with the commonly asked questions on cell phones. This is one section you just have to browse—it's all about food for thought!

MUST TRY SOFTWARE

Rainbow Six 3: Raven Shield Single Player

Command an elite, multinational squad of special operatives against a hidden terrorist foe. Rainbow, the secretive counter-terrorist organisation races against time to stop terror and unravel a mystery. In locations around the world, from London to the Caribbean Islands, lead Team Rainbow in a desperate effort to battle a madman and foil his doomsday plot. Boasting of top of the line graphics technology provided by the next-generation *Unreal* engine. Get ready to storm your way through 15 tough single-player missions that include the discovery of a cache of biological weapons and stopping an armed gang from terrorizing a London bank.



Size: *223 MB* ***Type:*** *Trial*
Playware\Arena\Games

StudioLine Photo Edition Basic 1.1.5

Use StudioLine Photo Edition Basic to manage up to 200 images in its ingenious archive. StudioLine Photo Edition supports all popular file formats, and lets you share picture thumbnails by e-mail. StudioLine allows you to edit images with several built-in filters and print images in preset standard sizes and also lets you create uploadable Web galleries on a built-in template.



Size: *26.29 MB*
Type: *Free*
Mindware\Software\Multimedia

Ulead VideoStudio 7

Ulead VideoStudio is a full-featured program with a broad range of tools. It allows you to capture DVD-ready MPEG video from DV/D8/Hi8 camcorders, VCRs, PC cameras, and TV tuner cards. You have the option to split captured video scenes into separate files. Ulead's real-time editing features include built-in scene to scene transitions, 30 customizable filters, and motion paths for animating text, as well as voice narration and adding in custom music!



Here is another bonus: we have also included the Ulead VideoStudio 7's official video tutorials on the CD!

Size: *76 MB* ***Type:*** *Trial*
Mindware\Software\Multimedia

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WEB SPECIAL

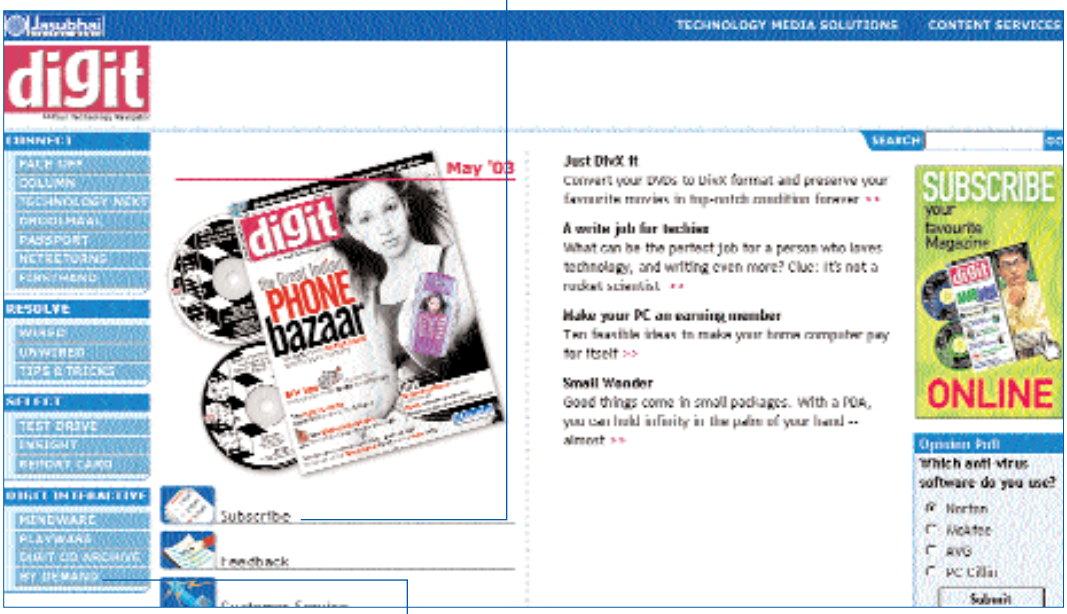
To Stop A Thief



Content companies struggle to safeguard their content even as crackers find new methods of defeating them. In the end, it's the consumer who pays for products that don't work

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Nascar 2003
Size: 119 MB
Playware



MyAlbum
1.94 MB
Mindware

WEB SPECIAL

gt rdy fr MMS

It's more than what you have seen on a pixellated monochrome screen—here comes the colourful world of MMS, full of pictures, audio and video…all on your mobile device and handheld!



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DIGIT MAY 2003

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Philips iPronto Digital Home Controller

■ What is it?

The iPronto is designed to control your home entertainment systems, lighting, climate control and more, through one common interface.

■ How does it work?

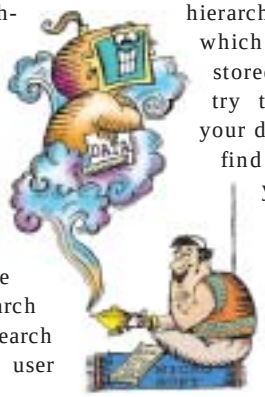
It comes with an Intel PXA250 XScale embedded processor, runs Linux and has a 6.4-inch touch screen LCD interface. The Tao Java Virtual Machine provides a secure environment for executing applications. It also comes with an infrared interface for traditional remote controllers, and implements Wi-Fi (802.11b) connectivity and even an Ethernet port. If that's not enough, there is also a USB port as well as an MMC/SD card slot for connecting to other devices.

■ What does it do?

The interactive user interface lets you view electronic program guides, select media sources as well as surf the Net and access e-mail. The device has a built in microphone and speakers that should let you listen to MP3s streamed over the Internet. With a readily upgradeable internal software suite, the device can work with just about everything in the near future, from interfacing with digital cameras to automotive applications.

Making things better

Scientists at Microsoft's research labs are busy cooking up new techniques that will make data easier to handle. Fast paced technology and the Internet are leaving vast repositories of unused data in their wake. Researchers have come up with search tools, better Web search techniques and user interfaces that will make finding relevant information easier.



ILLUSTRATIONS: Farzana Cooper

A prototype application called Stuff I've Seen, is built to store all the data that has appeared on a computer terminal. Another one called Ask MSR lets you pose questions in a natural form such as, "What are the symptoms of SARS?".

All this is aimed at offering the user an alternative to the hierarchical means with which data is currently stored. New techniques try to make accessing your data much easier. To find your holiday snaps, you could search for images with a tropical background, instead of using filenames.

The company is also working on new types of user interfaces. In GWindows, one can scroll through files or move windows though a combination of voice commands and hand gestures. Motion tracking technology will eliminate the need for special gloves. A wrist-twisting motion could one day adjust the volume on your favourite media player.

Rumours bite into Apple

The shares of Apple Computer fell by almost 9 per cent after the Los Angeles Times reported that the company is considering buying the world's largest record company, Universal Music Group. Universal is pegged to garner at least 6 billion dollars, according to analysts. Such an outflow of cash from the coffers of Apple, and the fact that they are likely to test uncertain waters, led to the tumble of share prices.



Steve Jobs, CEO, Apple Computer

Digital entertainment forms the pivot to Apple's strategy, as they introduce digital lifestyle products, such as the popular iPod that stores thousands of songs.

Apple CEO Steve Jobs said, "Apple has never made any offer to invest in or acquire a major music company. We will abide by Apple's policy of not commenting on rumours."

Sans wires and faster

Intersil Corporation, designer and manufacturer of high performance analog and wireless networking solutions, announced a new WLAN software solution that improves 802.11g throughput by over 300 per cent. "PRISM Nitro provides up to 50 per cent greater throughput performance in homogenous 802.11g networks," said Larry Ciaccia, vice president and general manager for Intersil's Wireless Networking Products Group. This makes it an ideal solution for applications, such as CD-quality audio and DVD-quality video streaming.

Initial testing indicated up to a 3x performance improvement in 'worst-case' wireless networking systems. Such systems would be made up of predominantly 802.11b clients and access points with just a few 802.11g nodes.

The technology is a firmware upgrade that will be distributed through a driver suite.

snapshot

Over 950 million messages are sent over NTT-DoCoMo's mobile e-mail service daily. Close to 80% are unsolicited

Source: NTT-DoCoMo

■ Phoenix, the open source browser rechristened Firebird to avoid a trademark dispute ■ ABTO figures show Reliance Info close to mobile million

Big portal in bigger China

Sina.com, a popular Web site in China, has joined about 200 Internet portals to form a search engine alliance that seeks to challenge global giants such as Google. The search engine is developed by the China Internet Information Centre and a Chinese firm called Sinobet. It links to a database of more than 30,000 mainland portals.

Of late, China has been blocking access to popular sites such as Google and AltaVista, which has led to the demand for reliable search engines. Sina hopes that more than 60 per cent of users will use its search engine, compared with 10 per cent now. The search engine is free for Internet surfers, but firms need to pay to be linked to the database.



The alliance denied being part of a government move to replace Google, even as it hoped to achieve a 20 per cent market share in the mainland this year. A representative said the timing of Google's access problems and the launch of the search alliance was a coincidence.

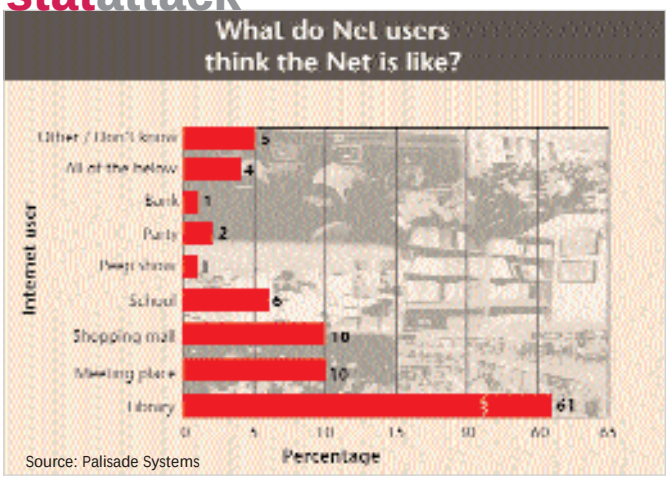
Dial-a-flu

A populace jittery over the SARS (Severe Acute Respiratory Syndrome) outbreak in Hong Kong can find some solace in an unlikely source. A mobile operator has launched a location-sensitive service that will alert subscribers near buildings struck by the deadly flu virus. Those opting for the service will have their phones tracked, and will be told by SMS which buildings within a kilometer of their location have had SARS cases occur. The managing director of Sunday Communications, the company offering the service, claims that subscribers can get the peace of mind needed to resume their everyday lives.

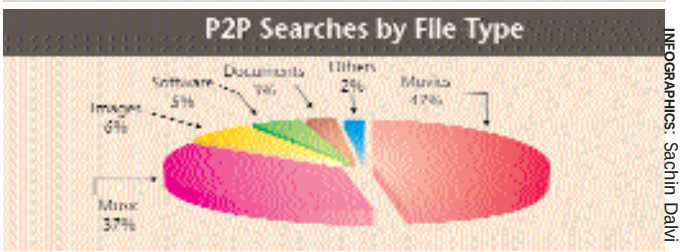
Users can dial a number to access the information posted by the Department of Health and then choose to subscribe to the SARS location alerts.

Sunday will also donate mobile services to SARS patients. The company is one of six mobile operators fighting for a slice of the cellular pie in a competitive market with one the highest mobile penetration rates in the world.

statattack



Source: Palisade Systems



Source: Pew Internet & American Life Project

INFOGRAPHICS: Sachin Dalvi

India matters

SAP, Germany-based software company reportedly plans to spend $120 million over the next 3 years on growing its business in India. This bands the company along with several high-profile technology companies that plan to, or already have, set up operations here. The company plans to direct the funds primarily toward marketing and sales initiatives, with the intention of tripling business in India over the next three years. SAP has a software development centre that employs more than 500 people. The company is in the process of moving to a 15-acre campus that can house up to 1,000 people.

redalert

Flaws in media players

Two popular media players, the RealOne player and QuickTime player have serious security flaws that put millions of users at risk.

The security hole, in RealNetwork's media players, can be caused by a specifically corrupted PNG (Portable Network Graphics) file. A successful exploit could let a hacker execute arbitrary code on a user's machine. Updates for the players are available at ***www.real.com***.

The Apple QuickTime media player has an unrelated security flaw. If users happen to load a specially created exploit URL, remote hackers could execute arbitrary code on their machines. Apple has recommended that all users upgrade to version 6.1, available at ***http://www.apple.com/quicktime/download/***

IRC Backdoor

There is a new Backdoor Trojan in town called Backdoor.Sdbot.H. Once infected, it allows a hacker to remote control a computer by using Internet Relay Chat (IRC). The existence of the file I3Explorer.exe is an indication of a possible infection. The Trojan auto-updates itself, adds several entries to the system Registry and infects the System directory files. All versions of Windows are at risk of getting infected with it. It can spread through IRC and e-mail. Users are strongly advised to update their anti-virus definitions and block suspicious attachments. Symantec has provided an advisory page at ***http://www.symantec.com/avcenter/venc/data/backdoor.sdbot.h.html***

■ The early reports about SARS came from Internet discussions ■ Electronic Arts to promote Nvidia products

The Great firewall of China

In an effort to let local propaganda trickle through to the Chinese people, the US. government's Voice of America broadcasts has commissioned creation of software that will let people circumvent the firewalls thrown up by the Chinese government. The software enables PC users running Microsoft's Windows XP or 2000 operating systems to tunnel through firewalls.

The idea behind the software is to allow evasion of firewalls through a third-party computer. The software, which uses Secure Sockets Layer (SSL), lets the person who installs it, set up a miniature Web site through which a firewall-restricted surfer can access the rest of the Web.

In addition to circumventing firewalls, the software also creates anonymity by covering the Web surfer's tracks and leaving no record of what sites he or she visited beyond the miniature Web site.

However, such software can also be used by underaged kids and other sections of society to gain access to information that is otherwise restricted.

snapshot

By **2008**, the market for mobile **adult-oriented services** may add up to **$1 billion**

Source: *NTT-DoCoMo/Strategy Analytics*

Yepp, it's cool

Samsung Electronics expects its new MP3 player—the Yepp YP-55—to grab the domestic Korean youth market. The new products are available with either 128 MB or 256 MB built in onboard memory. Though very small, they feature SRS Lab's WOW, MP3 encoding, FM radio and sound recording capability. In a strategic tie-up with SRS, this is the first flash memory MP3 player that supports WOW, which offers greatly enhanced bass tones and 3D sound. SRS Lab's WOW surround sound simulator, processes stereo channels to give the sound a more immersive, 3D feel.



The direct MP3 encoding allows music from various sources—CD players, cassette tape players or FM radio—to be directly stored as MP3 files, without having to connect the MP3 player with a personal computer. The player can operate on a single AAA battery for up to 15 hours; the FM radio can select 20 different channels, and an auto-search function is included. The YP-55 is expected to retail for $ 172 for the 128 MB version and $ 205 for the 256 MB version. The Korean market for flash MP3 players is estimated to be around 400,000 units in 2003, and Samsung Electronics expects to grab at least a 50 per cent market share.

A star is born

The infamous Iraqi information minister, Muhammed Saeed al-Sahaf has carved a niche in the hearts of many an Internet surfer. A Web site called We Love the Iraqi Information Minister, has become an Internet phenomenon. One-liners uttered by al-Sahhaf, such as "My feelings—as usual—we will slaughter them all", "I speak better English than this villain Bush", and delectable spins such as "The authority of the civil defence, issued a warning to the civilian population not to pick up any of those pencils because they are booby traps, ...they have started throwing those pencils, but they are not pencils, they are booby traps to kill the children", have guaranteed a place in history for the Minister. Within one hour of the launch of the Web site, it was getting 1,000 visits per second (www.welovetheiraqiminister.com). This number grew to 4,000 per second within days of the launch, forcing the team to move to a bigger server to cope with the traffic.



Iraqi information minister Muhammed Saeed al-Sahaf

heroes

BSNL

The Kolkata telephone service system—Bharat Sanchar Nigam Limited (BSNL)—has just started an 'Always On' Internet access system through their extensive phone network. Christened as the Direct Internet Access Service (DIAS), this service offers a 128 Kbps connection at relatively affordable rates.

Online Banking Customers

Customers have never had it so good, with banks offering sops when customers choose to pay their bills online, instead of writing checks. Customers who choose to clear bills through the Internet stand to win massive rebates and bonuses such as entering the sweepstakes to win sports utility vehicles.

zeroes

P2P

In a further clampdown of P2P networks on university campuses across the U.S, the RIAA has just filed lawsuits against four university students for setting up P2P networks across three college campuses. The RIAA is pressing for damages that could come to $150,000 per infringed song. Since late last year, the RIAA has been targeting university based file swaping networks in an effort to curb copyright violations.

SONICblue

Faced with bankruptcy after the agreement with Japan's D&M Holdings fell through, SONICblue, the maker of acclaimed products such as the ReplayTV and Rio MP3 players is now going to be auctioned off by a bankruptcy court.

■ 12 Taiwanese companies pool silicon know-how to boost the country's chip competitiveness

Price cuts, up ahead

A fresh line of price cuts is expected from the stables of Intel. The prices of 533 MHz FSB Pentium 4 processors will be cut by to 30 per cent on 11 May, ahead of the introduction of 800 MHz FSB equivalents ten days later, the company has told its distributors.

The new pricing structure, according to the Web site, X-bit Labs, will see the 2.8 GHz P4 fall in price from $ 375 to $ 262—a fall of 30 per cent. The 2.6 GHz falls to $ 193 from $ 241 and the 2.4 GHz from $ 193 to $ 163. The 3.06 GHz P4 will stay at $ 401.

The move is aimed at knocking the prices of these chips down to less than the introductory price of 800 MHz parts. The new comers are expected on 21st May, the report claims, with the 2.8 GHz P4C coming in at $ 278, the 2.6 GHz P4C at $ 218 and the 2.4 GHz P4C at $ 178. The 'C' indicates 800 MHz bus support, the parts also support HyperThreading. All this paves the way for the arrival of the 3.2 GHz P4C at the end of the quarter for $ 637, says X-bit Labs.

In addition, Intel will cut the prices of its Celeron range on 27 April. The parts affected are the 1.8 GHz to 2.4 GHz chips, falling by up to 23.9 per cent. The 1.7 GHz processor will remain at $ 54.

Data squeeze

Plextor has announced a new CD-ReWritable drive that can squeeze 40 per cent more data into standard blank discs. The PlexWriter Premium can pack 980 MB of data into a 700 MB disc and 1.2 GB into an 880 MB disc, according to the CD gear maker. It does so using the GigaRec option in the bundled PlexTools Professional software, working with the drive's hardware.



The increased use of space is achieved by burning up to 40 per cent smaller pits into the surface of a blank disc, thus granting more real estate. Such a special nature of the pits might not allow a standard drive's laser to read the media properly. The Premium line will ship as a standard internal IDE drive and as an external USB 2.0 unit. They will feature 52X read and write-once speeds, and a 32X speed for rewritable media.

For some time now, enthusiasts have been able to make use of between 10 percent and 20 per cent more data than the rated capacity of a disc by overburning, or writindata onto portions of a discs normally left untouched. However, such discs often cannot be read by normal CDROM drives.

The Big Blue Office suite

IBM is preparing a slimmer alternative to Microsoft's ubiquitous Office suite. It is planned as a set of applications that will run on corporate Web servers. The business productivity applications comprise of word-processing, spreadsheet and e-mail software. IBM said its applications are not intended to go head to head with the advanced features of Office but are aimed at those that do not require the advanced features that Microsoft's products offer. They hope that the low-cost associated with their office suite, will attract corporations.

According to company officials, there will always be 10 to 15 per cent of people who need the full mail, spreadsheet and document-writing capabilities, while the other 85 per cent do not wish to pay huge fees for features they don't need.

The applications, due in the second quarter of this year, are for companies that need to do simple e-mail, text-editing and spreadsheet work. The applications will not be sold alone, IBM will bundle them with its WebSphere portal server software.

Developed in the company's Lotus division, the applications are part of IBM's NextGen strategy for revamping its Lotus products. The first product of the NextGen plan was a lightweight e-mail client called IBM Lotus Workplace Messaging, aimed at people who use e-mail on a limited basis. The forthcoming office applications will also have the Workplace label, according to IBM executives.

Watch me

Nokia introduced a new kind of MMS device for the Americas market, the Nokia Observation Camera. The dual-band Camera is expected to be available during



the third quarter of 2003. After being mounted in a covered area and connected to a power source, the Nokia Observation Camera can be pointed at any area that needs to be monitored. It can be set to send images automatically to an MMS-enabled handset or an e-mail address at pre-determined intervals, when motion is detected, when a change in temperature is noted or when an SMS query is sent directly to the device. It can also can report ambient temperature via SMS or open a voice channel for live audio monitoring.

snapshot

57% of U.S companies already support wireless networks and another 22% will implement it within the next year.

Source: Jupiter Research

■ Dell Computer wrestles the top rank in worldwide PC shipments from Hewlett-Packard ■ Intel selects Bangalore for Centrino design team ■ New DIT plan

Liberty moves forward

The Liberty Alliance, a global consortium formed to develop online identity standards has unveiled drafts of its Phase 2 specifications—a step that it considers vital in creating a commonly accepted and more trusted way of building and managing identity-based Web services.

"The opportunity for Web services is enormous, and innovation in this space will drive the future of e-commerce," said Michael Barrett, president of Liberty Alliance. "However, in the meantime, there are business and technology barriers impeding this innovation and progress. These barriers include the complexity of identity management—a critical component in Web services—as well as the lack of technical standards and the inability for identity management products and services to work together." The alliance seeks to lower these barriers.

Drafts of security and privacy implementation guidelines as well as a 'Privacy and Security Best Practices' document were also introduced today with the Phase 2 draft specifications. These documents highlight global privacy laws and fair information practices, as well as provide implementation guidance for organisations using the Liberty Alliance specifications to build identity-based services.

Outsourcing giants

According to an IDC report, China is still some years away from threatening India's position as the software outsourcing powerhouse of Asia. "Although there are substantial outsourcing projects in the United States every year, China's IT companies are weaker than India in IT project management," said Nicholas Yong, a market analyst with IDC Asia/Pacific. China's software companies also don't have the sales channels in the United States that Indian companies do according to IDG. Other factors, that give India an edge, include its use of English and the quality of its product.

China may be in second place now, but its IT market is still the strongest-growing in the world, and it is also strong in both the export and consumption of software, said the report. While the US may be India's big market, Japanese IT firms are the biggest consumers of China-made software, according to IDC.



3G rights-management

IPR Systems, the Sydney-based creator of digital rights enforcement technology, has beaten Microsoft to the coveted crown of protecting content consumed by the next generation multimedia mobile phones.

IPR Systems' Open Digital Rights Language (ODRL) version 1.1 has been adopted by cell phone manufacturers such as Nokia, Samsung and Sony Ericsson. ODRL gives content creators the power to determine exactly how their material is used. According to sources, IPR's four engineers built the Digital Restrictions Management (DRM) language in about two years, before the first version was commercially adopted by Nokia and others.

ODRL is an open standard provided free to developers and phone makers in an attempt to spur wide adoption. The company's business manager said that it makes money by providing systems that best take advantage of the standard.

quoteworthy

"Red Hat's main focus has been and will continue to be the enterprise. We've had great success in migrating enterprise customers from proprietary UNIX"

Matt Wilson, Manager, Base Operating Systems, at Red Hat, Inc. Red Hat has just publically thrown open its FTP servers that host Red Hat Linux 9, the latest in its stable of the legendary Linux OS.

"We expect to apply Cell to a wide range of applications related to broadband networks, including digital consumer electronics and mobile terminals,"

Takeshi Nakagawa, senior Vice President, Toshiba. Cell is the new processor with a multi-core architecture that will power the PlayStation 3. Toshiba is a partner in the development of Cell and is looking at using the chip in next-generation consumer devices

tomorrow'stechnology

Liquid cooled systems

Researchers at Purdue University have designed a 'pumpless' cooling system that removes six times more heat than existing miniature cooling systems. Researchers thought that bubbles in the liquid coolant might block the circulation of the liquid through the tiny micro-channels. Instead, they discovered that the liquid flowing through the channels actually forms smaller bubbles that easily pass through them. What's more, decreasing the diameter of the micro-channels actually increased the cooling efficiency. The most interesting effect is that the liquid circulates in a self-sustaining flow in a closed loop that carries heat away from a computer chip, that does not need a pump. Computers of tomorrow are expected to generate as much as 300 Watts per square centimeter, this may be the solution to our cooling needs.

points to end of the road for Media Lab Asia ■ Pirated versions of Madonna's latest album replace the content of the Material Girl's Web site

Unlawful use

Hi,

Two months back, I installed Adobe Photoshop 7.0 (a 30-day evaluation version) on my system which has Windows XP, with no Internet connection.

After the trial period the software stopped working, so I re-installed the software using the Digit Mindware CD. Even then, I was unable to use it. I tried installing the same on a friend's PC with the same outcome: The software expired after 30 days and I was unable to use it anymore. I think that some data pertaining to the expiry date is saved in some part of the computer system. Kindly tell me where such data is stored on the hard disk and how to use the unregistered version of any software like this.

John
Via e-mail

digit

Dear John,

Software companies provide trial software to allow you to make an informed buying decision, especially since the software could cost more than you would be willing to pay for.

It is not legal to use the trial software for more than the allowed period of time. Finding and removing the stored data to allow the software to run beyond the 30-day period is as bad as cracking the program itself to prevent it from looking at the data. We cannot help you do this.

Hear the have-nots

Hi,

Looks like you guys are competing with the world's most popular software company, Microsoft! Every time MS releases an operating system, the demand for resources also goes up. So do the specifications of the Digit CD:

In October 2000: Windows 95/98, Internet Explorer 4.0/5.0+, Pentium 100 MHz, 16 MB of RAM. In April 2003: Win9x, Internet Explorer 5.0 upwards, Pentium 233 MHz, 64 MB of RAM. Do you guys think such resources are needed for just displaying the user interface?

Think of the lower-end systems that will have a problem and will not be able to get a clear idea as to what is stored inside the CD. OK, they can use the good old Windows Explorer to view the files, but many will not think of that!

I think a simple HTML interface (as you included in early 2001 CDs) will suffice, not Flash and Dreamweaver.

Karthik
Via e-mail

digit

Dear Karthik,

We move behind the times. The CD hardware and software requirements are all for products released 5 years ago. IE5 was available in 1998, as was the Pentium II processor. In three years, we moved the processor requirement up by only one generation, and to a speed 1/5th of the entry level desktops now available.

It is unreasonable to deprive the vast majority of our readers with decent hardware, of an interesting, lively experience. That said, we must also point out that there is no reason why the interface cannot function perfectly well on a Pentium 100 MHz. We deliberately avoid using the heavy, animation-rich Macromedia Director interface in favour of HTML and Flash that any machine running Windows 95 should be able to handle.

Commentary on education



Hello,

Your article on computer education was both timely and judicious. I'd like to add my two cents to that piece: Although these institutes have the latest software versions, most of them are pirated. The institute provides a skills-oriented rather than a certificate-centric curriculum, so the use of original or pirated software just doesn't make a difference. Also the only difference between the faculty and the student is that the former joined the course a couple months before the latter, and is a few modules ahead. Coupled with the ambiguous and unregulated quality of the institutes themselves, you have a case where a student wants to gain a 'valid computer education', but has no idea what to do if and when he receives the certificate.

Natraj Jayaraman
Via e-mail

digit

Dear Natraj,

That's a good summary of what is wrong with our unorganised computer education system. That's why we need standards to be maintained by a government agency. In computer education though, that may be jumping from the frying pan into the fire. Our standards based B.E. syllabi are so far behind the times; it is amazing and gratifying, to see students do well despite them.

Playable games wanted

Dear Sir,

Funzone was started to cater to people with older low-end machines as also to give some games which children could enjoy. I've noticed that almost all the games featured in Funzone are now trial versions and also require the latest software drivers, etc to play. Could you revert to featuring few low-end, freeware games that small children in age group 5 to 7 years find easy to play? This way they will be interested in computers, and they too would gain from Digit.

Jaggi
Via e-mail

digit

Dear Jaggi,

You are right about the intent of the section and we have indeed drifted a little from that mission. However, it is also a fact that though the games may be suited for younger audiences, or may have low hardware requirements, they will require driver updates. This is because when developers write new games, they use the latest software available. Beyond a point, we would have to resort to carrying software of historic interest to avoid driver updates. But rest assured, we will try to minimise any such inconveniences to you in the near future.

digit READER POLLS

Your vote counts

Q. Which anti-virus software do you use?

Norton	McAfee	AVG	PC Cillin
30.6 %	43 %	20.3 %	6 %

Clearly we need to carry regular updates for the Norton and McAfee anti-virus solutions

This month's question:

Question: What would you like to see on the Mindware CD? Choice of Answers (for Web site only)

☐ Business Software ☐ Utilities ☐ White papers / E-books

*Log on to **www.thinkdigit.com** and vote*

An unfair contest?

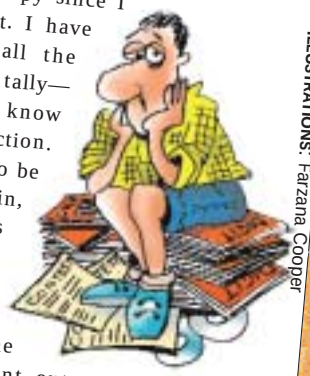
Dear Sir,

Although I am not a subscriber to Digit, I have never missed a copy since I started reading it. I have participated in all the contests. Medal tally—nil. I would like to know the criteria of selection.

1. Is it necessary to be a subscriber to win, like the results repeatedly seem to suggest?
2. I am drawn to believe, or at least the results seem to point out that you favour the metropolitan cities and are biased against remote states such as mine, Meghalaya. I do hope it is not deliberate, because we really feel neglected.

I hope you will not let me down and will clarify my doubts.

David
Via e-mail



ILLUSTRATIONS: Farzana Cooper

digit

Dear David,
We appreciate your loyalty, but we can only wish Lady Luck favours you in future contests. You see, our hands are tied when it comes to selection of winners—no humans are allowed near the selection procedure. All entrants have to register for contests, and no additional favours are made for subscribers. For all contests that involve scoring, a database program tallies the scores and builds up a shortlist of candidates. If that list is bigger than the number of prizes, or the contest involves a lucky draw, the program picks the required number at random. All we get to see is the final list. Now if you can come up with a way to direct the random selection, we will try our best to send a prize your way.

Cell phones please

Hi there!

I am writing this e-mail to congratulate you people for the wonderful March and April issues of Digit. The editorials were as usual, good. In March the GTA 3 review was really well done. I read the review and went out and bought myself a copy and was not disappointed. I look forward to such good reviews in the future as well. Also the article about robotics was good. In April, the article about Quantum Computing was really good and interesting. Please include related articles in future editions of Digit as well. Being a subscriber, I was pleasantly surprised to get the April issue on the 31st of March itself. Keep up the good work.

I think that now is the right time to carry out a full test on cell phones: GSM and CDMA as there is a wide variety to choose from including phones with colour screens. It would really help make a buying decision easier. Also upcoming technologies such as 3G warrant some mention in your magazine.

Vivel Balvir Singh
Via e-mail

Hi,

I have been longing for an issue of your magazine which will carry the most detailed review on cell phones ever carried out in India. Just like your June 2002 issue, this one should feature almost every phone in the market along with a small summary of each cell phone and not just the best of them. Please fulfil my desire and I shall admire you people for the rest of my life.

Jack Klon
Via e-mail

digit

Dear Jack and Vivek,
We hope this issue is a sufficient answer to your needs.

Contest Trouble

Hi,

I took part in your Contest Carnival. The magazine announced the results on the ZDNet India Web site, but I can only see the results of the January Alladin contest. When, and where will you folks show the contest carnival results?

Vaibhav Dubey
Via e-mail

digit

Dear Vaibhav,
The results on the site are indeed the Contest Carnival results. The Carnival consisted of a large number of independent contests, including the Alladin contest, and every other contest listed on that page. The design of the page did not make that clear earlier, but after we received your e-mail and those from a few others, we have updated the page to clearly state that it shows the Digit Contest Carnival results.

All winners will be notified and their prizes shipped automatically to the addresses registered with us.

Short Bytes

Pret-a-Porter

Hi Vinit,

I want to thank the whole of the Digit team for the 'Wear your attitude' section in the April Test drive. I had all the resources, except the iron-on-transfer paper, which I finally got my hands on. Now I'm the only guy in Muzaffarpur wearing T-shirts with everyone, from Kate Winslet Cate Archer, and from Lara Dutta to Lara Croft on it.

Anubhav
Via e-mail

A backup in time

Dear Vinit

The November 2002 article, Lifesavers, was fantastic and timely. I beleive that the frequency of backups is directly linked with the level of importance of the data lost. I backup every day, sometimes after every session.

Kirit Shah
Via www.thinkdigit.com

Goof Ups

Hi Vinit,

In the April 2003 issue, for the scanner test on page 62, the picture of Umax Astraslim 600 is named as a Canon piece.

Dhawal Bhandari

Sir,

On page 76 of the April 2003 issue, the specifications of the Samsung combo drive have been mixed up with those of a USB stick drive: 128 MB capacity, USB Power Supply, etc.

Satish

The correct specifications for the Samsung combo drive are 8 MB onboard buffer, Weight: 770 grams, DVD-R, DVD-RW, DVD-ROM, DVD-Video compatible.

Notice any goof-ups? Write to goof@jasubhai.com

Send your letters marked 'Readers Letters' to the Digit office:
D-222/2, MIDC, TTC Industrial Estate, Om Sagar Building, Nerul, Navi Mumbai 400 706,
Phone: 022-7629191/9200 Fax: 022-7629224
E-mail: readersletters@jasubhai.com



VIPUL SHAH

The Next time you Fly, The Internet will Fly too..

> "Many of us need Net access as much as we need phones...We are always a little nervous when we haven't checked mail for over a day"

Today, we take Internet access for granted. Many of us need Net access as much as we need phones, or even more. I personally check e-mail several times a day. One of my friends, a pioneer in computing, wakes up after 3 hours of sleep, checks his mail and then goes back to sleep. We get a little nervous when we haven't checked mail for over a day.

Business travelers have always been worried about connectivity, especially on long flights. Sometimes events require split second decisions. For example, stockbrokers or fund managers, feel the need to be reachable during market hours, to receive information and react to it. But, once a flight takes off, you can't do any of this.

Until recently, there wasn't an option, even if you carried your cell phone or laptop. Due to technological developments and the competitive nature of the travel industry, you can now get varying degrees of Internet access on flights and cruises.

For over two years, certain cruise lines in the Caribbean have been providing Net access at a cost of $1 per minute. Many companies are wiring up entire ships, with Ethernet access in every cabin. Norwegian Cruise Lines has a ship called Norwegian Sky which offers this facility.

On-flight Internet is the number one demand by business travellers, and is slowly becoming a reality, with two main players offering viable options.

Connexion, by Boeing offers broadbandbased connectivity. For this, an airline has to tie up with Connexion and aircrafts are retrofitted with two Ku band antennae—one for downlink, and one for uplink. The antennae electronically scan for satellites, which they connect to overhead servers and Wi-Fi antennas. The result is an operational satellite network with a 5 Mbps downlink and a 256 Kbps uplink. Current antennae do not function north of 75 degrees latitude, which is a problem being tackled by Mitsubishi Electronics.

Current test systems send data at 128 Kbps and receive at 3 Mbps, with production models estimated to have a 1 Mbps send and 20 Mbps receive capability.

Currently, trials of this service are underway with Lufthansa and British Airways on certain Boeing 747-400 aircrafts. Lufthansa calls it FlyNet, and is available on the Frankfurt to Dulles flight, while British Airways offers it on its Heathrow to JFK flight. Lufthansa is offering FlyNet free during the test period for Business, First class and some Economy class seats, but plan to charge $ 30 afterwards. British Airways, is offering this service only in Business and First class, and charges $ 30 during trial.

Tenzing Communications Inc, a Seattle-based company is another player with a different approach to the connectivity problem, and is far ahead in terms of deployment. Airbus, a Boeing competitor, is a strategic investor in Tenzing. Tenzing service offers only filtered e-mail connectivity. It partners with various smaller ISPs on the ground to give you seamless connectivity, even North of 75 degree latitude. You can connect your laptop and access POP3 accounts and select Web mail providers, such as Hotmail, or use entertainment screens in front of every seat to send SMSs to any mobile phone. It's already deployed on 40 out of 80 Cathay Pacific planes. This facility is also available on Virgin Atlantic flights, with a low cost per user of $ 10.

Tenzing expects it to be viable if 3 per cent of passengers use this service. Their approach is to use existing infrastructure-airline communication antennae and entertainment screens-to provide basic e-mail access, as research proved that e-mail is given more importance than Web access by travelers. This system can also be upgraded to support broadband access, as and when the market demands it. This is cheaper, as airlines don't have to retrofit new antennas or lose revenue due to installation time.

Boeing expects to equip 250 aircrafts with this service in the next 2 years, and 4,000 in the next 7 years.

Vipul Shah is chartered accountant, and writes/consults on Internet, e-commerce, banking, finance technologies. He can be reached at ***vipuls@yahoo.com***

A window to the Future

CRT monitors and LCD panels are passé. The new dawn of display technologies is all about three-dimensional images and foldable displays

If you were to buy a display today, it will most likely be a CRT monitor or an LCD panel. Both these technologies have been with us for decades, and they certainly beat teletype terminals hands down. But they are bulky, get in the way, require too much care and often demand that we adjust to the display rather than adjust the display to us. It is about time we step beyond the limitations of the bulky CRT and the fragile LCD.

There are many interesting display technologies vying for a space on your wall, desk and pocket. Some of these will add a new dimension to your visual experience; while others will just plain look better. But each one of these will significantly change the way you look at displays, making possible everything, from outdoor readable e-books to wall-size 3D views.

Real dimensions

We live and think in three dimensions, yet our information representation is, at its best, only 2.5 dimensions—a 3D model printed on paper or rotated in real-time on a 2D monitor. 3D displays have been around for a while, but they require the viewer to wear special spectacles. Because of the distance between the eyes, each eye sees a slightly different view—or perspective—of any object you look at. The two views are 'combined' by the



GRAPHIC DESIGN: Atul Deshmukh

obtain a 3D view. 3D spectacles try to achieve this same effect from one flat image source. Polarising spectacles have lenses that filters out images projected in one colour. The left lens may allow only a red image and the right one may allow only a blue image. Combining these two generates a greyscale three-dimensional view. Active spectacles have a shutter over each lens that alternately open and shut in coordination with an alternating image on screen, to generate a flicker-prone image. This is often available as an accessory to your video card, but rarely used because it's quite a headache for very unimpressive performance.

However, things have been improving. There is a new 3D display in town and it uses a toy technology to give a believable field of depth, requiring no equipment to be worn by the viewer. StereoGraphics is already selling such displays as SynthaGram monitors. Applications for SynthaGrams need to be developed using a special Software Development Kit provided by the company. Philips Research has prototype monitors that show almost three-dimensional images, from any normal application. They use special algorithms to interpret and enhance depth in 2D images.

The technology used to create these auto-stereoscopic displays is called Lenticular Display, and is a sophisticated form of something that has fascinated us all as children. In any stationary shop, you can find rulers that have a ribbed plastic surface on one side, applied over two images. Depending upon your angle of view, one image or the other is revealed. This effect has been known and used for nearly a century, but only recently has it been refined enough to be used in 3D displays. The lenses are angled to project two slightly different images, simultaneously. The angle on the lenses is such that one image is visible to the left eye while the other is visible to the right eye. The juxtaposition of these two images gives a 3D appearance to the combined view.

The computer display is formed with a combination of an LCD screen with a lenticular screen. The display is driven by any video card that has dual independent monitor support. The lenticular screen is a sheet with small lenses arrayed edge to edge in precise alignment with pixels on the underlying display. The display driver lights up appropriate pixels to push out two images at once to the viewer. Of course, because of the nature of the display, as you move your point of view around the display, the two images may not be visible separately. To compensate for this, SynthaGram monitors have nine viewing zones, i.e. areas where your angle of view is optimal for the images to appear in 3D. Elsewhere you will see a flat image much like a regular display.

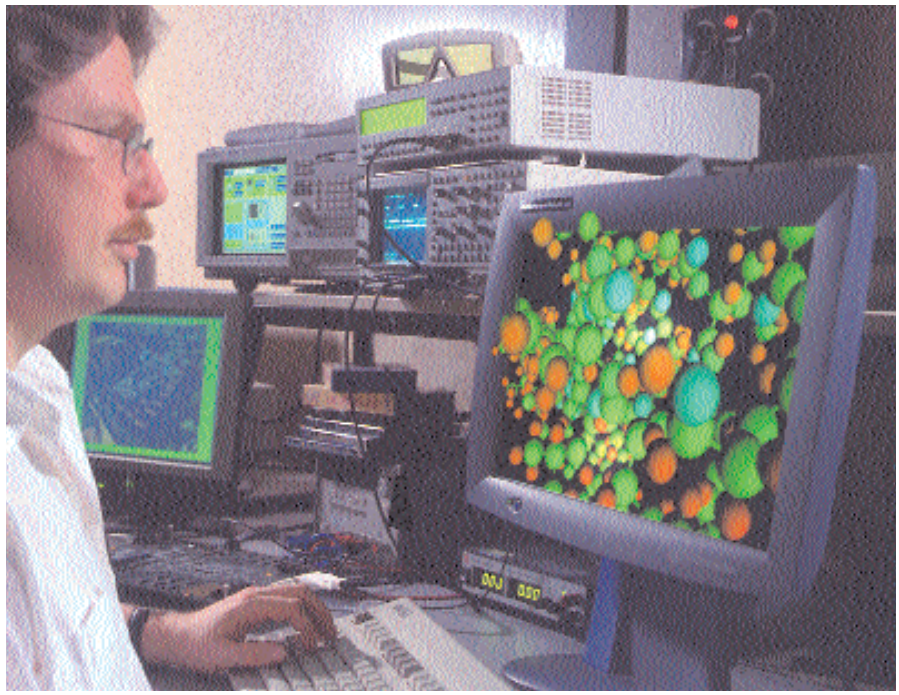
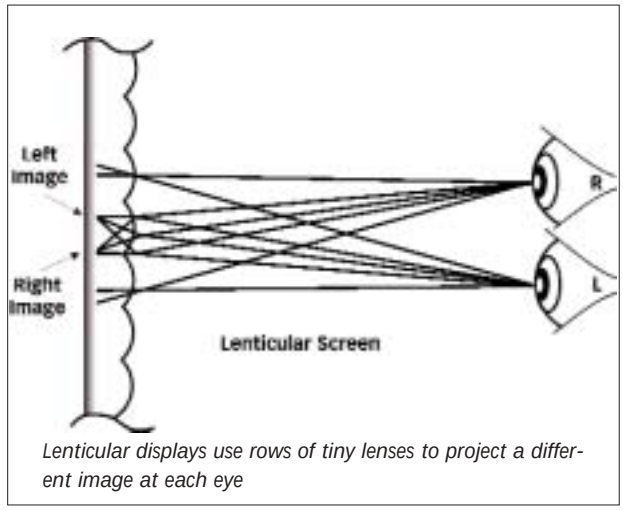


PHOTO COURTESY: Philips

A prototype Philips monitor showing pseudo-3D images



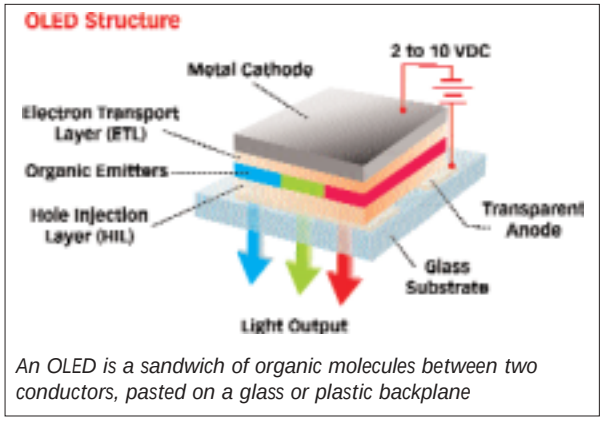
Lenticular displays use rows of tiny lenses to project a different image at each eye

Applications for such 3D displays are many, ranging from presentation of scientific and research data, to business intelligence to playing *DOOM 4* in realistic horror. But the most interesting opportunities with such displays is not just the specific niche applications, but the possibility of a real, usable three-dimensional interface that literally adds another dimension to computing.

OLED and beyond

The LCD is king when it comes to sharp, flat and thin screen displays, but there are challengers to the throne, none more likely to succeed than OLED screens. DuPont recently launched its version of OLED as the Olight division. Kodak has been working on this technology for over a decade after its researchers came up with the earliest breakthroughs, and such companies as Universal Display are busy collecting portfolios of patents for licensing to manufacturers.

Organic Light Emitting Diodes (OLED) are composed of complex organic compounds sandwiched between two electrically conducting materials. When a small current is applied to the conductors, the organic compound emits light. This effect is called electro luminescence. OLED construction is similar to an LCD in that it is a multilayer display. Active matrix OLEDs use transistors to control the light level of individual pixels in an OLED just like an LCD display. However, unlike an LCD, an OLED display does not necessarily have a top layer of glass.



An OLED is a sandwich of organic molecules between two conductors, pasted on a glass or plastic backplane



The EasyShare uses an OLED display instead of the conventional LCD

An LCD display has a backlight that is always on at full brightness and the liquid crystal is used as a polarising layer, to control the amount of light allowed to pass through. OLEDs on the other hand generate their own light and do not require a separate backlight layer. No backlight means one big layer eliminated from the flat panel display. Just this fact makes OLEDs economically attractive. Also, since the OLED only uses electricity in proportion to the amount of light to be generated, it saves on power. According to a Kodak technical paper, the elimination of the backlight and one sheet of glass combined with the thinner layers required for the organic emitter substance contribute to a much thinner display. An LCD active matrix display would be about 6 mm thick, while a comparable OLED active matrix display would only measure 1.6 mm thick.

But the goodness doesn't stop there. OLED displays have a much greater contrast range than LCDs, and approach the limits of the sensitivity of the human eye. This means that we can expect to see sharp, rich colours far superior to other conventional displays. Because there is no polarising layer in OLEDs, the viewing angle is far greater than LCDs. The polarising layer limits the angular range of light emission from the backlight. For example, picture a light in the back of a box. When you open the lid, you can see the light only from the range permitted by the box lid. However, the OLEDs themselves emit light right from the surface, like a light source on the lid itself.

Lighter, brighter and low-power requirements make OLEDs better suited to mobile applications. At the current state of technology, mass production of displays greater than 4 inches **(is this right?)** is unfeasible, though under laboratory conditions large screen displays have been made. Already there are prototype displays available for licensing from some of the pioneers, and Kodak has gone ahead and put their display into production. The recently launched EasyShare LS633 digital camera uses an OLED display for the camera interface instead of an LCD.

Current fabrication technology limits its OLEDs to glass substrates, but research is on for manufacturing OLEDs on flexible plastic backplanes as well. This means that the display can be bent, folded or rolled up and yet function perfectly. Better still, transparent OLEDs can be applied to windows or the windshield of a car to give a Heads-Up Display (HUD), similar to the ones used in fighter jets. Universal Display recently received a grant from the U.S military to continue research on laying down OLED displays on flexible metal foil. The applications are clear—a large, bright, low-power display that can be conveniently pocketed for mobility. On colour PDAs, the major battery drain is the huge backlit screen. With OLEDs consuming potentially half the power, you can expect significantly lighter devices that stay lit longer.

There are technical with OLEDs that are yet to be resolved. The most important one is that of the lifespan of the device. Researchers are facing trouble with blue light emitting materials. Kodak claims to have achieved a 10,000 hour lifetime for its blue organic materials, while hitting 40,000 hours for red and green. For mobile applications where the screen is only used intermittently through the life of the device, these are approaching adequate figures, but for desktop PC applications, or for use in flat screen televisions, these lifetime figures have to be boosted much more.

In the early production models, the power consumption is comparable to LCDs, but this is expected to be lowered in later generations.

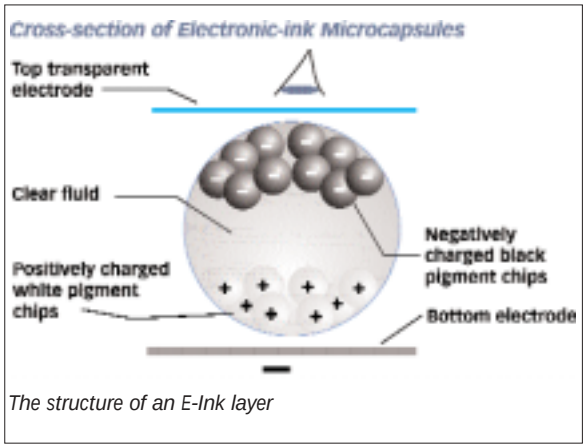
OLED displays are at a stage where they are just beginning to move into practical applications and there is tremendous interest in future developments possible with this technology.

Electronic paper

The first graphic device we look at is paper—a simple and cheap technology that has served us well for several hun-



The E-Ink reader a step in the direction of electronic paper



The structure of an E-Ink layer

dred years. To achieve a device with the familiarity of paper, blended with the convenience of digital technology is the ultimate goal for portable display systems. Look around you right now, and see the amount of paper we still consume, including this magazine you are holding. Most of it could very well be viewed as electronic paper, a device that reads, looks and feels like paper, but shows you Web pages or MS Word documents or the pages of an electronic book.

There are two key criteria that any electronic paper display must satisfy—have the readability and portability of paper, and consume very low or no power when in use. That's right, no power when it is being read or looked at!

E-Ink has been making waves for a while and they have now reached some level of success in creating high resolution displays. E-Ink's technology is quite simple in terms of the science behind it. The challenges are in fabrication of the ink layer itself. An E-Ink display consists of a thin film containing millions of tiny microcapsules layered over an electrical circuit. One half of the microcapsule contains negatively charged black pigment and the other half contains positively charged white pigment. When a positive charge is applied below the capsule, it attracts the black pigment down and the white pigment is pushed up. The spot above the microcapsule now looks white. When a reverse charge is applied, the black pigments would be pushed up, while the white ones will be attracted down. When the charge is removed, the pigment particles stay in whatever location they are. This means that once a display has been updated, it takes zero power to keep it that way. Contrast this with your CRT monitor that is refreshed more than 70 times every second, or an LCD that is a constant power drain because of the backlight.

LCD, OLED or CRT displays are transmissive, i.e., they emit light. An E-Ink display is reflective-it does not producing any light of its own, but relies on ambient light for readability, just like paper. The reflectivity of E-Ink materials is quite comparable to that of paper across a wide viewing angle. This means that not only is an E-Ink display readable inside a building, it gets brighter when you step outside in the sun, unlike LCD displays that become unreadable.

E-Ink has tied up with Philips to manufacture complete displays. They provide the ink layer, while Philips provides the active matrix backplane and control electronics. Philips recently announced a new fabrication technique for the transistors of the active matrix backplane that works on a plastic sheet. This means that E-Ink displays are available as flexible sheets for a number of applications.

Future watch

There are a slew of exciting new display technologies on the horizon and all of them are optimised for different applications. We will, in all probability, have all three kinds of displays in our offices and homes, as and when they become affordable. Pervasive displays are very likely to be the leading edge of pervasive computing in our environments. Displays have to be accessible so that computers can be hidden away, in a dark cabinet somewhere in the home or office. With thin, light and conveniently foldable displays, we will truly have access to information and entertainment anywhere we chose. Add a lenticular sheet on top and it can all be real!

SUMOD HAJELA

LCD Fights Back

Cholesteric LCD displays are new form of display that brings major new areas of application within the reach of LCD technology. Regular LCD systems regulate the output of light from a backlight, much like a fader switch. Cholesteric displays reflect light from a sidelight instead, and the display control is by varying their levels of reflectivity. To top it off, they are bi-stable, i.e., they can remain in either on, or off state without any power required to maintain it. Kent Display systems is a leading technology patent holder, and they have licensed it to about half a dozen manufacturers. Both Philips and Samsung SDI have demonstrated their own Cholesteric LCD displays. Samsung expects to be selling the foldable version for E-Book reader applications.

1/4 page AD



◀◀ Garmin iQue 3600

This is where you are

Garmin has put out an sharp PDA here, and it's topped off with attractive features for those on the move. The powerful 200 MHz processor and Palm OS 5, ensure a power packed experience. It boasts Garmin GPS and mapping software, MP3 player, in-built 32 MB memory, an extended battery life, excellent graphics and audio and tons of applications. You are sure not to lose your way with this baby.

Web site: www.gamin.com

POCKET PINCHERS

Here's where to splurge your life savings





◀◀ Sony Ericsson Z1010

Calling all gamers

Sony Ericsson's first 3G phone, will make you scream with delight, with it's streaming audio and video, video calling, music and entertainment and multi-player gaming.

Web site: www.sonyericsson.com



Kiss DVD DP-450

DivX Rulez ;-)

Finally, someone decided to bring out a DVD player that also plays MPEG-4 and DivX;-). Kiss Technologies is the first company in the world to do this. The DP-450 can play everything found on a CD—VCD, SVCD, CD, MP3, CD-RW, DVD-RW. It supports DVD/MPEG-4/Divx version 4 and higher, and also has a JPEG picture CD viewer, Progressive Scan video out, slow motion, parental lock and a Dolby Digital output.

Web site: www.kiss-technology.com



TDK XS-iV S80

Sounds like paradise

These drop dead gorgeous speakers from TDK have an impressive output of 80 watts and a frequency range of 60 to 20,000 Hz. The woofer is a high-powered forced pipe design, and the subwoofer, satellite system employs NXT's SurfaceSound technology, providing a previously unknown level of nearfield stereo imaging, resolution and clarity.

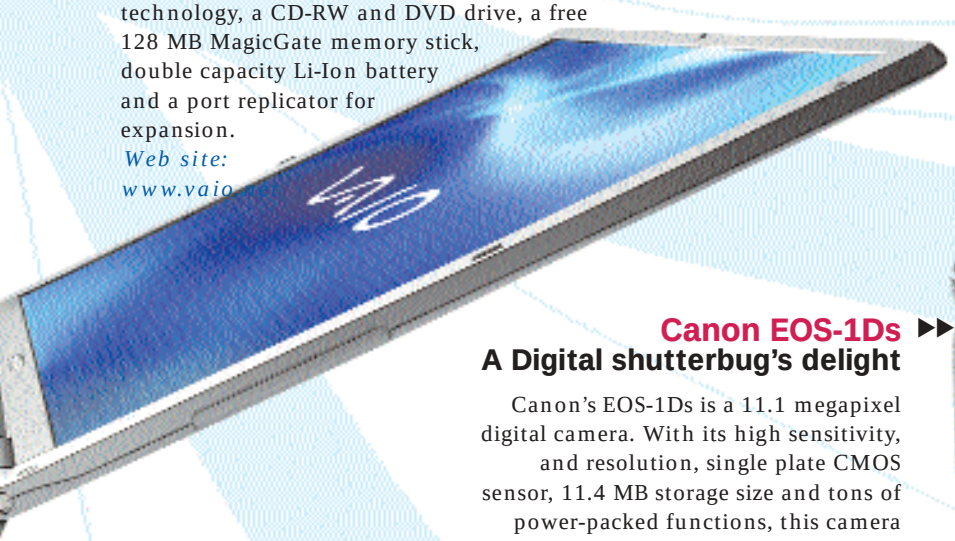
Web site: www.tdk-europe.com

Sony Vaio PCG-Z1A

Thin is in

Based on Intel's latest Centrino technology, this ultra-slim, ultra-light portable computer is also loaded to the gills with mouth-watering peripherals. It crams in Intel's latest 802.11b wireless technology, a CD-RW and DVD drive, a free 128 MB MagicGate memory stick, double capacity Li-Ion battery and a port replicator for expansion.

Web site: www.vaio



Canon EOS-1Ds

A Digital shutterbug's delight

Canon's EOS-1Ds is a 11.1 megapixel digital camera. With its high sensitivity, and resolution, single plate CMOS sensor, 11.4 MB storage size and tons of power-packed functions, this camera leaves you agape with awe.

Web site: www.canoneos.com





GRAPHIC DESIGN: Athul Deshmukh

Let me ENTERTAIN YOU!

Stuck in a jam, morning, noon or night?
Whip out your cell phone—Round One, Fight!

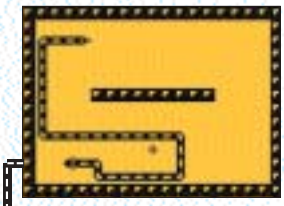
Observe the young lad, engrossed in a ritual. Note how oblivious he is to his surrounding; grimace as he slams his foot on the pavement, lower lip twisted in pain. Pay heed to the arched eyebrow and the piercing gaze that stares hungrily at a pixilated screen. Select fingers fly over an array of keys, buttons are pressed, princesses rescued and worlds are saved. Ah, a change of pace; now more frantic, forceful; utterances emerge from his mouth and lead those around to him to shame...a dismissive toss of the head, a sideways glance that ends in a devious smile or maybe a resigned sigh.

You have just spotted a new breed: species *mobilus*, sub-species *entertained*.

The sight is most frequent at bus stops, train stations and the many queues that string our life, whilst we wait in a motionless inertia. What better way to kill time than to play games on a cell phone? With many it's almost an obsession. Jacob Joseph, a 23-year old youth from Goa says, "I play *Snake* on any Nokia phone that I can get my hands on." The most popular games are Nokia's *Snake II*, *F1*, *Pin ball* and *Space Impact*. "I play whenever I am free," says Mufaddal Patanwala, a self-employed 24-year old. A proud owner of the Nokia 8310, Mufaddal would such as the cell phone makers to create games like bike racing. Even Abdulkadir Dahodwala, a 23-year old computer engineer agrees. "I play games while travelling, and would want games that promise speed and are more competitive."

But buying phones only for the games that they offer is not exactly the topmost

priority for most consumers. Shabbir Patanwala, 25-year accountant, for example, bought the Nokia 3330 because it was cheap and had good features. "Games do not top my priority list. I would eventually love to buy a 7650 but only because of the embedded camera." Gagan Gupta, a 25-year old game enthusiast also agrees with that point of view, "I did check for games but it was not the most important feature." He plays *Snake* on his Nokia 6510 and brags of a record score of 1600+. "If I see a score on someone's cell phone that exceeds mine, my first reaction is to break their record. It may annoy them but it entitles me to some big-time bragging rights," Gagan confesses.



Games do take on an important hue with some though. Jacob 'dumped' his Siemens cell phone only so that he could continue to play his favourite game. "I use a Nokia 3210; I bought it because I loved the game *Snake*. I had a Siemens handset, but the games in it didn't interest me at all. I owned a Motorola too, but it was even worse—it had no games at all!" His latest score is 513.

B. Mathew, the 31-year old General Manager of Fastcursor, says: "Instead of spending money on an expensive cell phone for some rudimentary game that is only neon-coloured, I choose to spend that amount on a PDA and get a better gaming console. I don't find the non-coloured pixel dominated games as interesting as those on the higher-end consoles." For hardcore gaming fanatics who are thrilled by the hunt, the kill, the blood and gore, mobile games is kid's stuff.

Info

According to IDC survey, 15 per cent Indians play online games and 13 per cent shop online

Here be the money

This does not mar the enthusiasm of the mobile makers, who see the gaming industry as a huge revenue-generating model. Established digital games companies are increasingly recognizing the potential of mobile gaming. Partnerships between wireless companies such as network operators or device manufacturers, and video games giants have emerged, including collaborations of Motorola with Sega, Nokia with Eidos, Orange with Rage and NTT with Nintendo. Distribution systems that range from pre-bundling of games to downloadable content are being experimented upon; the search for maximum profit is on.



Pedro Amaro is an independent game developer based in Portugal. With game programming experience mainly in Pascal, C, C++ and Java, he's currently focused on developing games for the J2ME and J2SE platforms. He is the author of *Colourama*, the first J2ME game to be fully developed in Portugal, and to be licensed for an international release.

"Regarding distributions systems, there's one thing that I'd like to see: air time revenue sharing", says Pedro. "Currently operators only distribute the games and share the revenues of each unique sell but do not share the revenue they make with the time the player spends playing over the air. If such a feature was implemented, I suppose that over the air multiplayer gaming would takeoff. Currently, most software houses aren't interested in creating multiplayer games as the extra work doesn't pay off in financial terms."

The mobile gaming market is subject to the disruptive principles of emerging technologies, and currently plays host to a sceptical view point that mobile games are not a profitable venture.

Norbert Chang, co-founder and CEO of Enorbus, the premier provider of wireless entertainment services in China, clears the air as far as profitability is concerned. "Markets such as Japan have demonstrated the amazing potential, not only for handset sales, but for games and wireless entertainment as well. And while we admit that some in the industry have mistakenly heralded wireless games as a get-rich-quick scheme, we also insist that there is a large profit to be made." Pedro cites price as a hurdle to be cleared, "The only thing holding back this market is the cost of the latest Java-enabled colour devices, which scares away most customers. However, once that problem is solved, I am sure that those who believe that this is a non-profitable venture will change their mind." Norbert adds that, "as a developer and content provider we are willing to work with any technology that entertains our users. We focus on exploiting the strengths of the technology, rather than dwelling on the limitations. Intelligent game design and a little creativity go a long way in developing games that maximize the opportunities of today's technology."

Games developed are as varied as the people they hope to appeal to. For instance, "I would prefer complex puzzles," says Sabira Slatewala, a 19-year old student. Or take Gagan who excitedly says "Arcade games are a must! They can add as many advanced games as they like, but classic games such as *Snake* will still be the most played ones. It's something like Windows *Solitaire* being the most popular videogame around the world." The popularity of a platform spawns a surfeit of software aimed at it, including games, a glut that attracts more users to it further raising its popularity; it is a self-contained cycle that attracts many like Gagan. "I'm really interested in getting a Nokia 7650! I've been doing some research over the Net, and have already found freeware games such as *DOOM*, *Prince of Persia*, *FIFA Soccer* and *Street Fighter*. There's a lot of free software available for it, and with the attached cam, I don't think I'll ever get bored."



It is interesting to note that the Nokia games group is a product of accident rather than a decision. George Pneumaticos, Marketing Manager of Nokia Games explained that whilst developing the 6100 series of phones, some engineers recognised that the platform was sophisticated enough for games. The employees at the Product Development gave them the go-head and, "It turned out to be a lot more popular than people expected." The 6100 series of phones included three games namely *Memory*, *Logic* and *Snake*. And no sooner was it launched, than *Snake* became the most popular game. According to studies, almost 68 per cent of people with Nokia phones with Snake on them had played the game.

Sing when you're winning

The simplistic nature of mobile phone



games, compared with the rich environment of console games, means the games rely more on the game experience rather than the surrounding media. The in-game sound and vision have been enriched almost to a distraction, with game experience almost taking a back seat. According to reports, some players in the mobile gaming industry believe in text-based games whereas others opine that 3D-games will take over the market soon. In fact, content providers think that SMS will be the most successful technology for mobile gaming even in 2005.

Ask Norbert about SMS games and nostalgia takes over, "SMS games were such a novelty: exciting and new to the market, a lot of fun to create... Probably our most famous SMS game was *Dating Annie*. We used a famous Taiwanese movie star, Annie Wu to encourage users. It was a 'character-development' game, in which users, through SMS choices worked to build up their personalities, careers, physical health, etc. The other element of the game involved SMS Essays. Users were invited to express their affection for Annie via SMS messages. The grand prize was a night on the town with Annie. Users responded very strongly to the unusual and unheard of prize."

Jeffrey Kay has been developing software for over twenty years and while he doesn't consider himself to "have significant expertise in the mobile gaming industry"; he nevertheless follows the market closely enough to offer a significant insight. He points out the popularity of SMS games; moreover he sees infotainment as a very viable means to get revenue out of such games. "The show *American Idol*, allows voting using SMS, which provides a revenue stream to the mobile carriers, who charge around 10 cents per message," he adds, "Mobile gaming technology will find areas where revenue is obtainable, most likely through infotainment at first."

The other half believe, that the technology development will be fast, and advanced two- and three-dimensional games will emerge in the near future. However, very few companies have made definite strategies that they would be pursuing. It seems that the industry is currently lacking persistence and changes the focus whenever a new technology is introduced.

"Both theories are true in way. With the Nokia N-Gage phones, you can get PSone quality graphics on your handheld mobile phone, which makes it a better handheld gaming option than even a Gameboy Advance. But not everyone can really afford a phone such as the N-Gage, and not everyone wants a mobile device solely for the purpose of gaming. That segment may be more than satisfied with the humble arcade games in their cell phones. As far as SMS gaming is concerned, it'll work extremely well if SMS becomes free," explains Gagan.

info Datamonitor predicts that the year 2005 will witness 200 million people in Western Europe and the United States playing Internet games on their mobile phones

Entertainment through mobile phones is a nascent business niche that is gaining more attention. SMS games target audiences that are interested in, say, a 5-minute pursuit. The cost for these games is minimal while the market volume is high. The target group of advanced games is primarily in the age group of 20 to 30-years, who can afford expensive devices. The games sold on such platforms are expensive and the volume of the market is very less.

Fragmented markets and disagreements over standards spawn simple content. Due to limited technology, games such as *Bingo*, cards and quizzes rise up the popularity pole. Games are also expected to expand using the "communicative properties of the phones". Multiplayer and location-specific games are expected to develop. Customers will be willing to pay for playing the games, and most wireless gaming revenue will come from two sources—sponsorship and subscriptions. Priced games will probably be limited to networks that can offer faster service, and therefore higher quality games. Jeffrey expounds, "There will be some revenue obtained through multi-player communities and infotainment as a subscription service. Some games will obtain revenue as a percentage of the fees charged by the carriers for data access. Some games will have to be purchased like software is today."



He points, "Live delivery—via WAP and such—is probably going to take the longest to happen because of the time involved in downloads and the cost to the carriers. Downloadable games will probably focus on multi-player revenue models where subscriptions or percentages of the carrier's data charges can be obtained." The fact is that WAP is an exciting medium; it has a social flavour that appeals to developers such as Norbert, "The technology has allowed us the opportunity of increasing user interaction to the point of creating wireless communities. A WAP game is about far more than just playing, it's also about competition: playing against, or with other users is very exciting."

Talk of technologies, market shares and delivery methods pale in comparison to the passion showed by some of the consumers of this content form. The jubilation shown by some is virulent. Take Adarsh Kaul for instance: married, working, happy, with a penchant for cell phone gaming that would put a 9-year old kid to shame. His passion certainly rivals one of that age group, "I am an avid fan of *Snake I* and *II*, a highest of 1324 in the first and 2416 in the second! I need to play the game for a solid 52 minutes to get at those scores." His sense of wonder shines bright in his jovial eyes, intent to shatter barriers between fun and religion as he candidly confesses that, "I always hoped that Nokia would host a Snake championship, I would win it!"



Dreams have a wonderful property of being shared by all. As Norbert expounds his vision, "We love games, and are always trying to offer better to our users and friends. We anticipate the day when people put down their PS2 joysticks in favour of their phones. For us, the key to success is ultimately found in fantastic games: great graphics, fun and addictive playability. Regardless of the other pieces of the wireless value chain, or the direction that technology may lead, great games will continue to be our goal, and will ultimately be our measure of success." Amen to that.

AHMED SHAIKH and RUPALI PATIL

How we Test

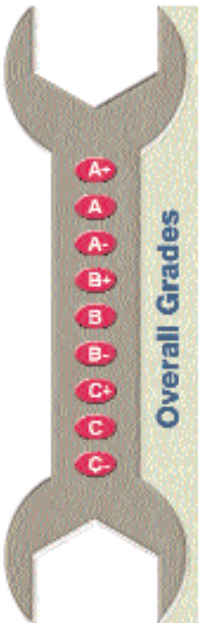
It looks good and the technology is glitzy, but does it do the job?

The Digital Media Test & Research Centre (DMTRC) conducts a series of elaborate tests to evaluate the merit of each hardware and software product. To ensure that our readers have all the information they need to make an informed buying decision, engineers at DMTRC evaluate and review the latest hardware, software and technology services in accordance with the most up-to-date evaluation processes and methodologies used around the world.



Comparison Tests

We use a dual rating system, the first of which is applied to the Comparison Tests in which we compare the performance of products within a particular category.



Each product is evaluated under different parameters such as performance, value for money, features, warranty and support, etc.

Weightages are then applied to the various test parameters according to their importance for that particular category of products.

These weightages are then used to arrive at an overall grade for each individual product. An overall grade of A+, therefore, indicates that the product is close to perfection.

The Awards

Digit awards outstanding products by selecting a Best Performance and Best Value winner in each comparison test. The winner of the Best Performance Award will be the product that scored the highest in the performance segment of our tests. This award represents the best performing product in our tests and doesn't factor in any other parameter such as value for money, features, support, etc. The winner of the Best Value Award will be the product that scores the highest in our value for money parameter which is derived taking into account the ratio of a product's performance and features to its price. The product winning this award offers good performance at a great price.

In Bazaar

The second part of the rating system is used to evaluate individual hardware and software products in the Bazaar section. The evaluation covers parameters such as performance, ease of use, value for money and the build quality/features of the product in question and then arrives at an overall rating.

Here each of these parameters is given a weightage of 25 per cent and is rated on a scale of 5, which is represented by arrows ( ).

The greater the number of arrows, the better the product. This simple five-point rating system is designed to give you an easy-to-interpret assessment of a product. For example, a product that receives an overall score of five arrows signifies an outstanding buy!

The 5-point Rating System used in Bazaar	
▸▸▸▸▸	**Excellent:** A brilliant combination of price, performance and features—far beyond expectations
▸▸▸▸▸	**Good:** A good buy, better than most products in its category
▸▸▸▸▸	**Average:** Reasonably competent but nothing spectacular about the product
▸▸▸▸▸	**Mediocre:** Does not live up to expectations, needs improvement in many areas
▸▸▸▸▸	**Poor:** has serious drawbacks and needs improvement before it can be used for its target application

Digital media TEST & RESEARCH CENTRE

In Test this Month

Tring! Tring! Ok, so we all hate those loud ring tones but cell phones are increasingly assuming an integral part in our technology-driven lives. 35 of these consumables ring in their charms within the busy walls of the Digit Test Centre. Nokia, Sony Ericsson, Siemens, Alcatel are all covered in this comprehensive shootout. Ergonomic considerations such as grip; performance parameters such as voice clarity and ease of use; aspects relating to the user interface and features such as Bluetooth were all held firmly in mind while putting these gadgets through the paces.



Acer is the latest entrant in the Tablet PC market, with an 800 MHz processor and 256 MB of RAM. Is it a worthy addition? Find out in Bazaar.

Another neat little trinket is the optical mouse christened with a mouthful of a name—the SecuDesktop 2000 EyeD Optimouse. A digital camera from Olympus and a digital camcorder from Frontech also go under the magnifying glass. The latest version of McAfee VirusScan also makes an appearance, promising to offer security from viruses, with new features such as HAWK to boot.

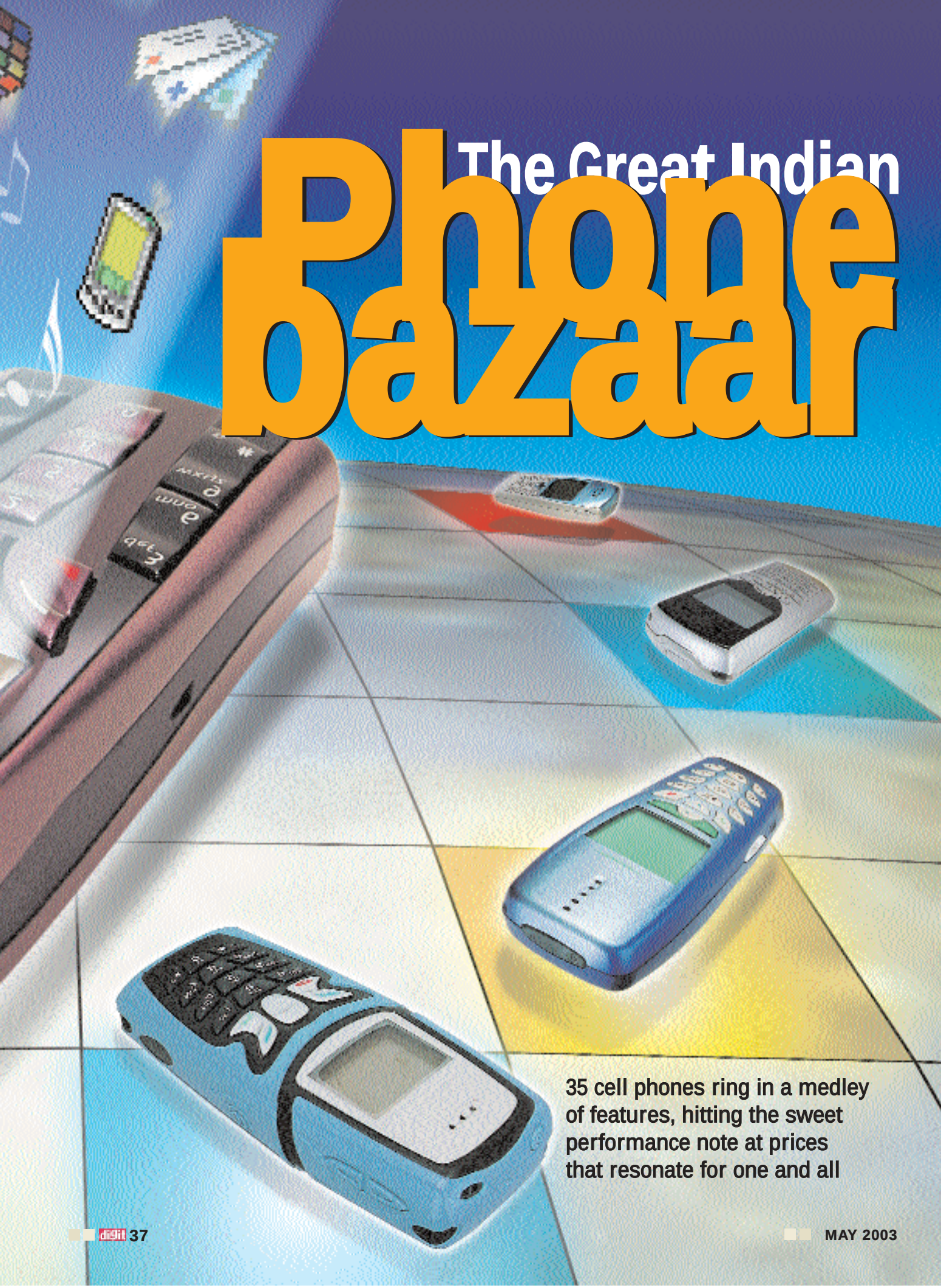


And there is more—a hard disk, a UPS, DVD burning software, a 4.1-speaker set, the works! Enjoy!



GRAPHIC DESIGN: Atul Deshmukh, PHOTOGRAPH: Jiten Gandhi

The Great Indian Phone bazaar



35 cell phones ring in a medley of features, hitting the sweet performance note at prices that resonate for one and all

The cellular phone market has a reason to rejoice. The demand for mobile phones have sky rocketed; business has kindled fierce competition between the service providers, and GSM service has become more affordable to the common man. Whether it is the affordability or the sheer joy of flaunting the sleekest models, the mobile phone craze has diffused through every section of our society. To take a close look at the booming handset market, we tested the best and latest instruments that are available in the Indian scenario. We covered five major brands and 35 models, and classified them into three categories: The 'Just a phone' category had the low-end, no-frills, affordable handsets; the 'Smart phone' category saw sets meant for the business user, that had a few extra features; the 'Also a phone' segment comprised gadgets that would, almost as an afterthought, also allow you to make a phone call.

How We Tested

Since a mobile phone is a consumer product, its allure is built through print advertisements and television commercials. This is why the looks and design of a model played integral part in its overall score—after all, everyone wants to buy a cute phone.

Since mobile phones are also turning in to the smart devices that can perform tasks other than just making phone calls, we assigned maximum weightage to features.



The performance of the phones was tested by calling to and from landlines to the test handset from different locations such as open grounds and the innermost areas of a multi-storeyed building. We also noted down the period and type of warranty offered by the vendor and suitable weightage was assigned.

The phones were categorised by the most determining factor—the price. All the phones that cost below Rs 8,000 were classified within the 'Just a phone' category. Similarly, the phones that fell within the price range of Rs 8,000 to Rs 18,000 formed the 'Smart phone' category; whereas all the phones above Rs 18,000 formed the 'Also a phone' category.

The phones in the Just a phone category must possess features such as compact size, light weight, rugged body shell, decent address book capacity, and a standby battery life of around 2 days. They should also come bundled with some games, ring tones, a calculator, reminder options, etc. If the phone supported SMS chat, personalisation, had a calendar, or had WAP support, it earned extra points.

Similarly, for the Smart phones we looked for features such as an address book with storage space of over 250, SMS storage capacity of at least 100, a good calendar to cram in reminders or notes, capability to send notes and schedules via SMS, a larger screen to display long messages and the calendar, data connectivity through WAP or an IrDA port, and most importantly, a solid standby battery life of about a week. If a phone in this category had a colour display, an icon-based menu, GPRS or camera support, it edged ahead in terms of score.



JUST A PHONE
Price: Less than Rs 8,000
Page: 39



SMART PHONE
Price: Rs 8,000 to Rs 18,000
Page: 43



ALSO A PHONE
Price: More than Rs 18,000
Page: 52

Testing and benchmarking procedure

We evaluated the cell phones based on the following criteria:

Style and design: We rated the look and feel of each and every phone on the scale of 5. We also took into consideration the opinions of mobile users.

The reason we rated style so highly, is the fact that even if a phone is very feature-rich and performs well, but looks average, there is very little chance of it being accepted by users.

We looked at various features such as phone grip, build quality, keypad lock, shortcut customisation and so on.

The weightage assigned for the style and design to Just a phone was 20 per cent, Smart phone was 25 per cent and Also a phone was 35 per cent.

Features: The features of the phones were logged and depending upon the categorisation, differing weightages were assigned. For example, SMS is ubiquitous and is a given in any cellular phone, be it low or a high-end. MMS however, is the in-thing and only present in the high-end pocket burners. We thus awarded points for MMS under the Smart phone and the Also a phone categories, whereas the phones in Just a phone were not evaluated on this particular feature.

We prepared a comprehensive feature list to pace the cellular phones through. Details such as ring tone functionality, group messaging, phone memory, display quality, ease of use, durability, grip, calendaring and to-do lists, PC connectivity, Bluetooth, IR, WAP and other Web browsing capability, HSCSD, GPRS, MP3 playback, etc, were all appropriately considered.

Performance: Performance of a cell phone depends on the network. To avoid any ambiguity due to network loads, we tested the phones in three different network zones, at three different time intervals. Performance is a necessity, thus these scores did not vary across the three categories.

Value for money: Value for money is an indicator of the overall price to performance ratio of a product. It is obtained by adding scores from performance and features, and factoring it with the price of a product. The weightage assigned to Just a Phone was 50 per cent, as price is the deciding factor in this category. For Smart Phones we assigned 25 per cent, and only 10 per cent for the Also a Phone category.

Warranty and support: Warranty and support plays an important role for these costly, light, delicate and sensitive electronic devices. The requirement was a one-year warranty, and the option of a standby handset, in an emergency, is also a good option. However, we did not assign any weightage to it because all brands offered one year warranty.

Features table for cellphones
Find it on the Mindware CD
Some prices have changed after CDs went to press

Just a Phone

The 'Small is beautiful' philosophy works just fine in the world of Mobile devices. Compactness is now a necessity, not a luxur. Mobile phones have shrunk over the years, and are now smaller than a pack of cigarettes, and packed with features that were previously unheard of.

Looks have also transformed, from the first cell phone—the Motorola DynaTAC 8000X, which weighed 870 grams and was almost a foot long—to the tiny marvels of today. The more you pay, the more a phone can do for you, however in this section, we look at today's vanilla phones, which perform the basic function of a mobile phone and don't cost the earth.



Motorola C300
Rating: B-
Price: Rs 6,695

Design and style

The design and style of a phone, plays a vital role in the buying decision. The keys should be designed for typing long messages easily, but also gel with the design of the phone. Phones such as the Sony Ericsson T100, and the latest Nokia 2100 and 3610 stand out in the crowd, because of a complete new design and good grip. The Alcatel One Touch 311, was too thick with a smooth body that impeded grip. The Motorola C300, on the other hand, had a firm grip thanks to the small form factor and the finish of its body.

As for usability, many phones—ranging from the older Nokia 3310, to the latest Nokia 3610—have a 2-way navigation key that comes handy while scrolling through a long list of names or messages. The Alcatel One Touch 311 has a two-way navigation key, which is better than other phones. It is akin to the scroll wheel of a computer mouse, which can be used to scroll up and down, and also as a button. However, the button has to be pressed hard, which is taxing if you're in a hurry to get to some menu option.



Alcatel 0T 311
Rating: B
Price: Rs 4,995

Many people complain about the number of key presses it takes to reach a function within a menu. Therefore, we checked the ease of use of the interface by performing commonly used tasks, such as writing new messages or changing ring tones. The Nokia phones were simple to use. Sony Ericsson, on the other hand takes some getting used to. Once you spend 10 or 15 minutes with the user manual, everything falls into place. Both the Sony Ericsson T100 and T200, have the same interface, but the T200 has a 4-way button, which provides easier access to settings. Sony Ericsson and Motorola are the only phones to have shortcut customisation—you can assign the same key combination to your new phone as your old phone. Nokia on the other hand, has the old system of keying in digit combinations to access different menus, which calls for good user memory.

If ease of use is a must, and design is high on your list, consider the Sony Ericsson T100.



Sony Ericsson T100
Rating: A-
Price: Rs 5,995

Basic phone features

Once you have checked out the look and feel of the phone, and browsed through its menu, the next important consideration is battery life and weight. A phone should not compromise on weight, with build quality, as impacts can leave the phone useless if the internal electronics or the LCD screen is damaged. As far as build quality goes, the Nokia phones are the most sturdy phones in the market, especially the 33xx series. The Sony Ericsson phones, especially the T100, were not far behind. This phone weighs only 75 grams, has a good build quality and low price, making it a good buy.



Nokia 3350
Rating: B
Price: Rs 6,499

Battery life

The battery life is one of the most critical features of a cell phone. The phone with the maximum battery power, was the Nokia 3350, which was blessed with an 850 mAh Li-Ion battery that can last as long as 4 hours and 45 minutes. This time will come down if you use other features such as sending or receiving messages, composing tones or editing pictures.

The Alcatel 311, has a rated talk time of 5 hours and 30 minutes. In real world conditions, where signal strengths and temperatures fluctuate, this time will reduce to about 3 hours. This was also the only phone to have a Ni-Mh (700 mAh) battery, which looked like three AAA batteries, enclosed in a feeble plastic case.

All the phones were Dual band, and if you plan on roaming abroad, only the Sony Ericsson T200, with Tri-band support is a viable option. This phone also sports WAP and GPRS.



Nokia 3315
Rating: B
Price: Rs 5,399

Sony Ericsson has introduced a serious contender—the T200—to Nokia phones in terms of basic features, such as weight, network support, price, and looks.

Memory

The in-built memory of a cell phone not only helps you store more contacts, but also lets you access your phone book, even if your SIM card expires. While adding to the cost of a unit, in-built memory definitely extends the usability of the phone. More data that can be stored on such a phone helps in day to day use. Out of the 10 phones compared in this category, only the Nokia 3310, 3315 and Sony Ericsson T100 did not have in-built memory. The Sony Ericsson T200 can store 350 contacts, while the Alcatel 311, can store 250. The main

Top 5

Voice clarity (out of 5)	
Nokia 2100	4
Nokia 3310	4
Nokia 3315	4
Nokia 3350	4
Nokia 3610	4

advantage that the Alcatel has is that a single name can be assigned 3 different numbers. This saves lots of space since many contacts have both mobile and land line numbers, and therefore managing and retrieving them becomes very easy.



Seimens A50
Rating: C-
Price: Rs 6,150

SMS

SMS is used extensively to exchange pictures, jokes and important messages. Manufacturers are now selling mobiles in which the user can type a message as long as 460 characters. However, because of the GSM standard limitation, you will not be able to send or receive a single message with more than 160 characters. Newer handsets break long messages into units of 160 characters and send or receive them. All the 33xx phones from Nokia can take 459 characters making them the most comfortable phones for typing long messages.

The 33xx series also has soft keys and good button placement, which reduces fatigue. The Siemens A50 supports a whopping, 760 characters though, the keys are bit hard and therefore not really conducive to typing that much on the go.



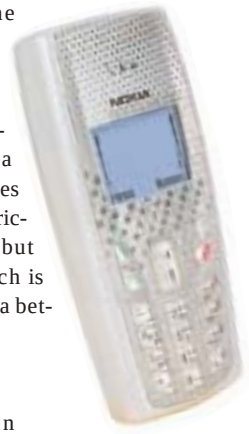
Nokia 3310
Rating: B
Price: Rs 5,495

Ring tones

None of the phones, including the Nokia 3610 and Sony Ericsson T200, had Polyphonic ring tones. However the Nokia 3310 had as many as 37 in-built ring tones and seven user-defined tones, either via downloading or composing—44 is enough of a variety by any standard. Many phones also had the feature of assigning specific ring tones to particular contacts—two models, namely the Motorola C300 and the Nokia 3610 did not have this feature. With the Nokia 3610 however, the user can assign different tones as SMS alerts.

PIM

Personal Information Managers (PIMs) are very important if you need to maintain an extensive number of notes and require an alarm and calendar to remember multiple things. Some high-end phones now support the ability to create and forward notes, to other supported devices. Sadly, these technologies are still expensive to integrate in the low-end phones, and therefore only a few, such as the Sony Ericsson T200, T100 and the Motorola C300 had them. The Sony Ericsson T200 and T100 are the only phones to give a weekly view of the calendar as well, which is very important if you need to key in notes for a particular date. All the Nokia phones had the reminder feature. The Sony Ericsson T200 is a good recommendation but it has very hard and noisy keys, which is not the case with the T100, making it a better choice over the T200.



Nokia 3610
Rating: B-
Price: Rs 7,499

Internet connectivity

WAP is outdated now, with GPRS looming on the horizon. The reason GPRS isn't already popular, is the poor network coverage by service providers and the high associated costs. Greater WAP content should be available once WAP over GPRS is made available in the market. With possible data transfer rates of 171 Kbps, in theory, you will be able to browse, chat, send pictures, check e-mail and even transfer files. The advantages are many but the infrastructure is not yet ready. This is probably why only the Sony

Top 5

Talk time (in minutes)	
Alcatel OT 311	330
Motorola C300	300
Seimens A50	300
Sony Ericsson T200	300
Nokia 3350	285

LG CDMA Phone

The LG CDMA phone is a part of the RelianceIndia mobile service. It is very compact and sturdy with a very firm grip. The keys are nicely laid out for easy browsing through the menus. There are four hotkeys for one-click access to the message menu, ring tones, R-world and phone book. R-World has two games, the R-menu and Multimedia tab, which did not work at the time of testing. Just like the Nokia phones, the reception was excellent—so loud at full network strength that the handset needed to be kept at a distance of at least an inch away from the ear. The reception quality drops significantly once the signal strength falls below the 50 per cent level.

The menu browsing is as easy as Sony Ericsson phones and you will not take more than 10 to 15 minutes to get used to the menu structure. Voice-dialling, a common feature, is absent from this phone—a major shortcoming. The phone also supports two phone lines, which is good feature for those who expect to get multiple calls simultaneously.

The four-way button works as the selector for four different functions. This reduces the number of clicks required to perform simple tasks. The same ease is built in the planner where the user can easily key in the schedule and set an alarm as a reminder. The keys of the phone are a bit hard and therefore the users will find it a bit difficult to key in long messages and schedules. The four lines of messages lets the user read the SMS without much scrolling.

This phone is filled with all the regular features of the sub-Rs 8,000 category phones plus some more features such as the JAVA based games, *Mobile Hawk* and *Black Jack*. The phone has good voice clarity and ease of use.



Speak Easy

GSM offers a variety of advanced features and services that includes speech encryption, facsimile, data services and SMS. From the outset, GSM has been a system designed with stringent levels of inbuilt security. With constantly enhanced transmission protocols and algorithms added to the flexible platform, GSM remains a very secure wireless standard.

Enhanced Full Rate (EFR) is one of the key features in developing new markets for differentiation of speech quality between existing GSM networks and new networks that have EFR infrastructure and mobiles. EFR not only enables the GSM operator to differentiate its product from existing networks, it also allows it to compete with services as it offers a comparable speech quality.

So what exactly is EFR? It is a codec that has been defined specifically for speech quality purposes with its improved coding algorithms so that it has higher tolerance to interference.

With GSM radio, speech is converted: transferred by a mathematical algorithm into digital format, transmitted and then translated back to its original form at the receiver end.
The EFR codec is particularly optimised for the natural transmission of the human language. The characteristic sound and the language melody of humans remain (the harmonics are maintained), thereby the language becomes warmer.

A majority of handsets available in the market support the EFR standard. If supported by your handset and your service provider, you can receive far better quality voice reception, at the cost of a decrease in the talk time of your phone. On the other hand if the network has the Half-Rate codec active, then there is a decrease in the voice quality with an approximate increase of 25 per cent to 30 per cent in the talk time of your phone.

We called up a leading mobile operator to find out whether they provide EFR. But they were clueless about it and we still await a response.

Ericsson T200 had GPRS support in this category. The Nokia 3610 and the 2100, which are new launches were not GPRS enabled. We hope to see more GPRS capable phones, under the Rs 8,000 price tag soon.

Extra and Miscellaneous features

The mobile phones of today have some nifty features to show off. The Motorola C300 had the voice-command feature, where as voice-dialling is common in all Nokia phones. Adding voice tags is very easy with the Nokia phones. The voice tags were perfect, even though they were recorded in noisy environments. Surprisingly, the Sony Ericsson phones missed out completely on this feature. They also disappointed us, with support for only one phone line, which even old phones such as the Nokia 3310 have. If you are looking for the cheapest, frill-free, phone with a calculator and games, then Nokia 3310 is the best choice.

Performance

When it comes to voice clarity and picking up signals, there is no competition to a Nokia. Nokia phones have the best antenna and support electronics, which gives them excellent clarity. We tested the phones in different areas, both open air and inside buildings, and found out that there were some areas where only the Nokia phones managed to stay connected. All Nokia phones performed equally, thus you need not worry about voice clarity when buying a Nokia. Sony Ericsson performed decently, but lacked voice clarity. These phones also failed to catch signals in building interiors. The same was the case with the Siemens and other brands. Hence, if your workplace is located far away from sunlight, as it is in many offices in the metros, a Nokia comes across as the ideal candidate.

Take that call

This comparison was mainly between Nokia, which was dominant in terms of numbers, and Sony Ericsson, which has the impressive T100 and T200. The Nokia 3310 and 3315 are showing signs of ageing, as they lack many common features, such as calendaring, and still sell only due to the glory they earned in the past and their lower prices. The Sony Ericsson phones are looking very competitive. The T200, which costs less than the Nokia 3610, 2100 and even the 3350, packs more features and looks just as good. The T100, on the other hand, not only has a different look, but is equally good in performance. It is also competitively priced.



Sony Ericsson T200
Rating: A
Price: Rs 6,495

Top 5

Phone grip (out of 5)	
Sony Ericsson T100	4
Motorola C300	4
Nokia 3610	3.5
Nokia 3350	3.5
Nokia 3315	3.5

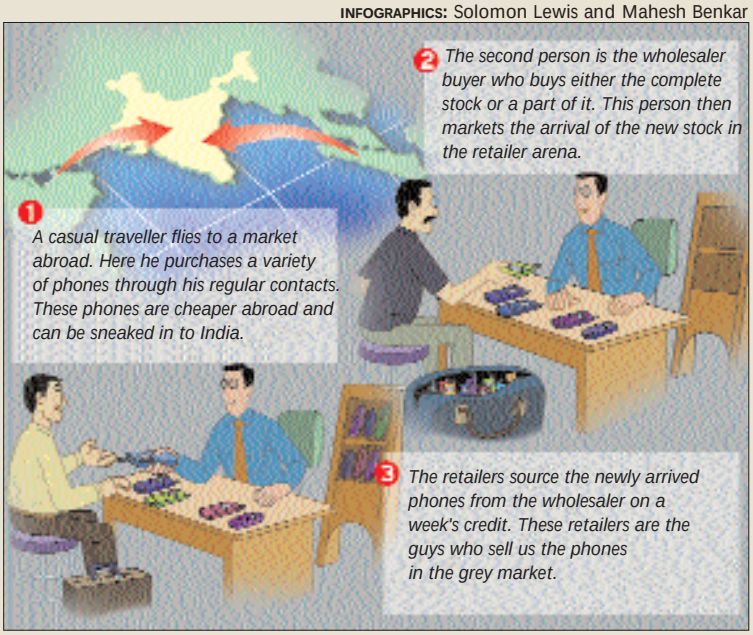


INFOGRAPHICS: Solomon Lewis and Mahesh Benkar

How Grey is Your Valley...

The price difference between mobile phones available in India and abroad has always been a sore issue with consumers. This is because what you get here for as much as Rs 6,500 can easily be bought for up to Rs 1,200 less from the Dubai and Singapore markets. This price gap widens with the latest, and top of the line mobile phones. This is enough of a reason for a popular grey market where the phones are cheaper than those available through the proper channel.

The other reason that contributes to the customer's inclination to the grey market is the narrowing of the rift in services offered by the two factions, namely the authorised dealers and the grey market. Earlier the authorised deaslers gave one the advantage of a legal bill of purchase, which was a valuable documentation. However, now even the grey market has begun providing bills along with a purchase. The service came in rather late, once the authorised dealers started selling the phones at competitive price and stroked a fierce contest amongst the grey market operator. In the end, it was a win-win situation for the consumers. But how does this network operate? Is it akin to a den of a horrifying villain from our silver screen or a plush office of the smart, white-collared dude? Let us find out.



STEP 1 Since this is an illegal affair we are talking about, don't think that any *taporis* are involved here. The kind of people, or passengers, as they are commonly known as—who pull this whole affair through—have enough education under their belts to tackle most of the dicey situations that might arise with grace. They are the lot who travel to off-shore markets, make purchases there and dump the phones in our local market. They travel in aircraft and carry other items—mostly electronics gadgets, watches, DVDs and so on. Although they are known faces with the custom officials they still don't get caught because the guy on the other side of the desk gets a percentage to let the luggage go unchecked.

STEP 2 Once the package is out of the airport, 70 per cent of the battle is won. The only thing left now is to get it to some wholesaler. Experience and contacts let them know who to approach in the business—people with enough money to buy the goods, and further distribute them in the market. These are the second level contacts who either buy the complete lot or pick the one they think is better suited to them.

STEP 3 The wholesaler then spreads the word within the so called business circle about the arrival of a new lot. The new arrivals will be bought by local shop owners situated in the main market and famous malls, where it will be sold to the consumers. This completes the circle. If you think that the passenger, the wholesaler and the shopkeeper, earn hefty margins on these handsets—then you are mistaken. The margin on each of the low-end phones is as low as Rs 200 to 150 per piece. It is the high-end phones, other electronic gadgets and optical media, which earn good margins. As you read this, the scene is going to get much tougher for grey market operators. The reason behind this is the minimal, and fast dwindling price difference between the models available through proper channels and the grey market. Even consumers now prefer buying from official sources rather than the grey market.

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Alcatel 525

Price: Rs 9,995 B

The 525 is a small and compact phone that looks a bit outdated, and feels like a soap bar with little aesthetic appeal. The display is extremely small, the keypad cramped and the buttons really hard to press. Though Alcatel provides three different face plates, none of them look appealing.

The menu structure is uninspiring and does not offer an intuitive interface; this is further complicated by the hard, rectangular three-way joystick meant for navigating through the menu. The keypad is cramped and the keys lack the tactility and are at times, unresponsive. A high-resolution small LCD screen forms the display that is capable of displaying three lines of text at a time. A bright blue backlight provides the night vision capabilities.



The phone comes with 250 capacity entry book, and lacks group SMS and SMS chat support. It comes bundled with a calculator, currency converter, three games and two phone line support. The presence of voice dialling, voice commands and voice memo capabilities are an obvious advantage. It also does away with calendaring options, but one can key in reminders into the alarm menu that rings even when the phone is switched off.

The phone comes with WAP 1.2.1 support and GPRS for high speed connectivity, but sorely misses an IrDA port. It has poor signal reception, due to which the voice clarity and quality is significantly hampered. The phone comes with a Lithium-ion power pack that gives it a maximum of three-day standby time.

Overall, this is an outdated model that neither charms the buyer with looks, nor features, but still costs Rs 9,995.

Alcatel 715

Price: Rs 14,995 B+

Alcatel has tried to break into the high-end phone market with this well-researched handset. The 715 is a sleek, oblong, rectangular phone with a large LCD display that takes up the upper three quarters of the entire length. The phone comes in four basic colours; the one we reviewed sported a combination of light grey and silver imparting it a sedate, business look.

The keypad that takes up the remaining one-third of the phone surface, is quite large, and the buttons are well spaced out. All the keys are very responsive except for the five-way joystick, which is hard and tacky. A shortcut key placed on the sides can be personalised to bring up the most frequently used menu.

The large LCD display is capable of displaying seven lines of text and the font size can be increased and decreased according to preference. However, the display isn't as crisp as it should be and the screen appears faded out.

Alcatel has used an icon-based menu structure that can be navigated conveniently using the five-way joystick. The phone book has space for 800 entries and you can even create up to 13 directories (four directories by default) in the memory, and assign each group with a different ring tone. Also, the contact information is very comprehensive with ability to record the name, surname, job profile, two e-mail addresses, postal address and a text note. Similarly, the calendar is also extremely detailed and functional, yet simple to use. The phone supports SMS, EMS, voice-dialling, voice-commands and also doubles as a dictaphone; not to mention it has the mandatory, calculator, currency converter and alarm clock. It comes with polyphonic ring tones and an external composer that can be loaded onto a PC. One of the joys of the 715 is playing games on it—the screen display rotates 90 degrees, giving it a handheld games console feel.



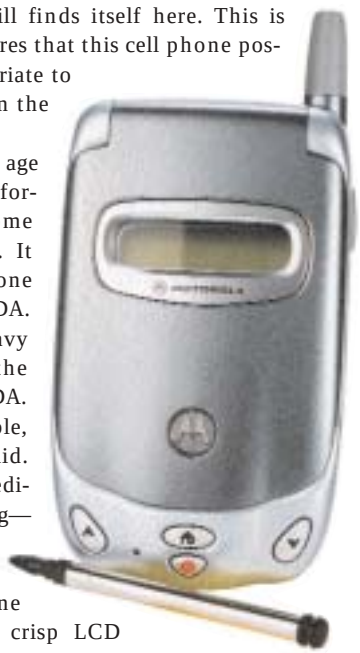
Apart from these features, the 715 comes with WAP 1.2.1 support for browsing the Internet. On the data connectivity front, it is provided with an IrDA port and GPRS support. It has a handsome, one week of standby battery time. In our tests, the phone showed excellent signal reception, speech and voice clarity.

To sum it all, the Alcatel 715 is a good phone that is stuffed with practical planning features. The menu takes some time to get used to, but once done, you won't touch any other phone. However, it can do with a better navigation keys. Priced at Rs 14,995, it is slightly expensive, especially when pitted against the Sony Ericsson T68i.

Motorola A388

Price: Rs 19,995 B

Although this phone breaks the Rs 18,000 barrier set for the Smart phone category, it still finds itself here. This is because of the limited set of features that this cell phone posseses. We did not think it appropriate to let it compete with the entrants in the Also a phone category.



The A388 believes in the new age mantra of enmeshing various information technology products to come up with an all-in-one solution. It combines the usability of a cell phone with the functionality of a PDA. Weighing 130 grams, it's a heavy phone, but that is justified by the extra hardware that makes it a PDA. The build quality is commendable, the phone feels rugged and solid. Open the flap and you will immediate notice that something's missing—a keypad! Motorola has made the screen into an input device, by using a touch screen. The phone comes with a large, standard, crisp LCD

display capable of displaying seven lines of text. The backlight is feeble, but lights up the entire screen evenly. The flip cover also comes with an external LCD that lets you see the caller's number without opening the phone.

The menu structure is extremely simple with large self-explanatory icons. The touch screen makes navigation very simple, but the absence of a keypad takes some time to get used to.

The phone-PDA combination gives the A388 the extra edge when it comes to information management. Entering the information using the touch screen requires some practice, though the phone does a decent job at character recognition. The phone can gulp down a humongous 1000 detailed entries, apart from the memory space for SMS, e-mails and graphics. It supports six different e-mail accounts, using nearly all protocols such as POP3, IMAP, etc. It offers neat calendaring options, a calculator, to-do list, call history,plus it lets you download Java-based applications.

It has an IrDA port and a serial cable for data communication with a PC. It is also GPRS-enabled for faster data transfer.

During the test we noticed that the phone can either be used as a PDA or a phone and not both simultaneously, which is the biggest drawback. The signal reception and the voice clarity were fairly good. At Rs 19,995, it is a decent deal, especially when you think it as a combo and not as just a cell phone.

Motorola C350

Price: Rs 9,795 B+

The C350 is a sleek looking phone, with a nice use of colours on its outer shell. The keys are radically designed with curves flowing over them, but the ergonomics of the keypad is not up to the mark. The menu navigation is achieved using a four-way key and two dedicated soft menu buttons. The menu is simple, intuitive and self explanatory.

The C350 has many features built into it, the most visible of them being the 4,096 colour LCD display capable of displaying three lines of text. It also sports SMS, EMS, SMS chat, group SMS and long messages of up to 450 characters. The phone features an address book capacity of 250, apart from the SIM capacity. It also has a weekly calendar view to schedule your appointments, reminders etc.



The C350 features a vast range of multimedia features including polyphonic ring tones (60 total—30 in-built and 30 downloadable), interchangeable covers, downloadable screensavers and themes, as well as other multimedia enhancements. Other nifty features such as voice dialling, Java support, WAP 1.2.1 and GPRS support, further enhance the feature list of this phone. However, the phone does not have an IrDA port for data connectivity.

The C350 does come with a mini USB connector at the base, which is a good feature to directly connect to the PC. It has decent signal reception, and fairly good voice quality; only when the signal strength decreases considerably, does the speech quality get hampered.

Overall, a good phone with loads of features, decent looks and a terrific price, at just Rs 9,795 it gives the most bang for the buck. The C350 has rivals in the form of the Sony Ericsson T310, which —apart from the same features— provides an IrDA port, WAP 2.0 support, and is also priced some where around Rs 9,500. The deciding factor between them are the looks.

Motorola T 720

Price: Rs 15,995 B

The T 720 is one of the most beautiful looking and functional phones from Motorola. This phone has an amazing mixture of looks, cutting edge technology and usability that is seldom seen on any other phone. Flip open the phone and feast your eyes on the neat laid out keypad, the four-way navigation keys, and the large soft menu keys. The build quality is excellent—the phone feels rugged and solid. The large colour LCD display is beautiful, with everything showing up wonderfully bright, crisp and clear. The display is capable of displaying 9 lines of text, which really helps in reading long SMS messages since it requires minimum scrolling.



The T720 employs an icon-based menu structure that is simple to use and intuitive. The user interface is exceptional with excellent use of directional keypad and soft menu keys. You can even assign six favourite functions to the keys—four for the directional key and two from the two soft menu buttons. As if that wasn't enough, voice command activation is also possible. The keypad buttons are large and easy to use with good touch feedback—the only sore point was the directional keys, which aren't suitable to play the games.

The phone comes with a mammoth 1.75 MB of memory, that can store all the downloaded games, applications, themes, wallpapers, pictures etc. On the entertainment front, the phone comes with three pre-installed Java based games—*MotoGP*, the evergreen *Tetris* and *Astrosmash*. It does have a date book option, but Motorola has not provided a monthly view that would have complemented the large screen well.

The phone supports WAP 1.2.1 and has GPRS. The only thing missing from this phone is an IrDA port and hence, if you have to download, your only option is the cable connection or WAP. It also supports an external FM radio set thus turning it into personal radio on the go.

The T 720 has excellent signal reception and good speech clarity. At Rs 15,995, the phone is priced on the higher side, but it makes up for with its beauty, excellent display screen and loads of features.

Motorola V66

Price: Rs 10,495 B

The V66 sports an ultra-compact design with a foldable earpiece that contains the display LCD. The phone is small enough to be hidden within the palm. The three line LCD display is crisp and clear, especially when the white backlight is switched on.



The V66's minimal size, however, forced Motorola to sacrifice a lot on the practical functionality and usability. The buttons on the keypad are recessed and hence are quite difficult to operate when you want to dial a number quickly. The navigation keys also suffer from the same problem—the usability of the soft menu keys is further hampered by the small size.

The menu structure is simple and easy to use due to the presence of four-way navigation buttons and two soft menu keys. Despite its small size the V66 isn't short on features. The phone has an address book capacity of 500 and a calendaring option with date book that gives a weekly view. It has voice dialling and ability to record a one minute voice memo. Many customisation options are available, wherein one can personalise the 32 ring tones, assign them to a group etc. The phone also supports animation—the cursor moves smoothly to the next menu rather than jumping.

WAP 1.1, and GPRS provide connectivity. On the performance chart, the V66 produces decent performance with good speech quality and acceptable signal reception.

The V66 costs Rs 10,495, which is quite expensive considering the features offered. One would rather opt for the C350, which offers all the features at a lower price with a colour screen.

Motorola V70

Price: Rs 16,995 C

The Motorola V70 is quite stunning: the small, compact silver body, white on black display screen, luminescent keypad and unique 360 degree rotating keypad cover are certain to turn heads.

It sports an elegant menu structure that is simple to use like the Nokia phones. The keypad layout is bit odd, with soft menu keys placed on the rim of the rotating bezel, whereas the navigation key is placed on the keypad, a tedious arrangement to work with. Moreover the keypad keys are too small. The small LCD display is also bit different the text appears white on a black display and the contrast offered is not up to the mark. Due to its small size, only two text lines can be displayed making reading long SMS messages cumbersome.





The V70 lacks features when compared to the Sony T68i or the Nokia 6510. You'll find a calendar, a currency converter, a calculator, voice-activated dialling, voice-dialling, 64 ring tones (32 of which are customisable), vibrate mode, two-way SMS, caller ID, conference calling, three games, and wireless Web access. The V70 does not have a calendar option, but has a date book that gives a weekly view of your schedule. This isn't very effective to work with, due to the limited screen size.

The phone supports WAP 1.2.1 and GPRS, and has a Li-Ion power pack, which provides good battery life—a standby time of around three days. The signal reception strength is good and the call quality is acceptable. But when the signal strength does drop, there is appreciable loss in speech.

Overall, it is a very stylish but not a very practical phone. One would expect more features for the hefty price of Rs 16,995. If you want a phone for daily business, which is simple and practical to use, then overlook this phone.

Nokia 3530

Price: Rs 9,099 **A-**

With the launch of the 3530, Nokia seems to have gauged the market reality well. Thus far, we have seen Nokia overstretching the life of all their models. But with the competition getting hotter, as Sony Ericsson and Motorola are bringing in colour phones to cater to the low-end market, Nokia couldn't afford to be left behind. The 3530 seems to be the perfect answer to counter both, the Sony Ericsson T310, and Motorola's C350.

Nokia shows its traditional strength of bringing in radical design ideas for its cell phones, which makes one sit up and take notice. The 3530 is Nokia's first colour screen model for the masses. It has the typical characteristics of the 3xxx series—a slightly elongated body and weighs around 100 grams. The keypad makes it really stand out from all other Nokia phones, as well as the semi transparent cover, which allows the white backlight through certain parts of the shell.



The 3530 comes with a 4,096-colour display that infuses life into otherwise dull menus and icons on the phone. The colour screen is dimmer, but makes up for it with excellent sharpness. The radically designed keypad is the most responsive keypad on any cell phone that we have come across in this comparison. Although it requires some time to get used to, once done, it is a walk in the park for any SMS junkie.

The menu structure is classic Nokia, with colours added for more fun. The menu is browsed through a four-way keypad. This phone has the fastest processor amongst all the smart phones. With the Sony Ericsson phones, you have to stare at the hourglass, but the 3530 jumps to the next screen in a flash.

The cell phone comes with all the standard 3 series features, such as SMS Chat, MMS, WAP 1.2.1, calculator, currency converter, alarm clock etc. Apart from these features, the phone also supports polyphonic ring tones and Java based applications that can be downloaded using high-speed data connections, such as GPRS and HSCSD. Nokia has been considerate enough to provide a 1000 mAH battery for 5 hours talk time and 13 days standby time. The 3530 has excellent signal reception and good voice clarity.

The 3530 makes an excellent package with good features and performance alike. The only drawback is the lack of an IrDA port for communication. It provides you with all you can ask for—the usual Nokia features, a good colour screen and a terrific price of just Rs 9,099.

Nokia 5210

Price: Rs 10,899 **B**

The 5210 cell phones carry the ruggedness introduced by the 5xxx series of Nokia cell phones to new levels. This is the only phone that has a rubberised protective shell, which to a certain extent, makes the phone water and dust resistant.



The 5210 comes in a burnt orange and pastel blue rubber casing, giving the phone its distinct identity and an aggressive character. The keypad layout is good with ample spaces between keys. The only problem with the keys seems to be the power button, which has to be pressed with all your might., The navigational keys also require additional force. The four-way button navigation buttons make menu browsing simpler.

The menu structure is very simple and effective and browsing through it is a breeze as the shortcuts let one jump directly to the required sub-menu by pressing a combination of keys. It sports a high-resolution LCD display, capable of displaying four lines of text, with a pastel orange backlight.

This phone has been available for over a year now, and the ageing is prominent. The 5210 has a 250 capacity address book, and call registration showing the last 20 dialled, 10 received and 10 missed calls. It has support for long messages and also supports the SMS chat feature. It comes with an in-built PIM functionality, though the calendar view is restricted to only two weeks at a time. This can be frustrating if you use the calendar frequently.

The phone comes bundled with five games, a ring tone composer, stopwatch, count down timer, calculator with currency converter, a thermometer and an inbuilt IrDA port for data transfer. It has a decent standby time of 3 days. As with all Nokia phones, the signal reception is good and voice clarity is excellent.

The only drawbacks are the outdated features and the price. Even after one and half years, the phone still sells at Rs 10,899. This is expensive, when compared to the features that a phone such as the Sony Ericsson T310 offers for a lower price.

Nokia 6510

Price: Rs 13,599 B+

Not only does the 6510 pack in all the virtues of the 6xxx series, phone but also the best features of all other series, especially the 8xxx series.

The change that comes to immediate notice is the high-resolution screen and the slowly fading in turquoise backlight when activated. Such backlighting is refreshing, especially after using the conventional green, which is widely used for all other Nokia models. The build quality is acceptable, except for a flimsy battery cover.



The 6510 also employs the same menu structure as the rest of the Nokia phones, which is quite simple to use. The keypad buttons are very responsive, though the navigation buttons are bit cramped. Feature-wise it is almost identical to the 8310.

This the best phone when it comes to calendaring—it comes with a full monthly or weekly view for those with busy schedules. The phone is able to store 500 contacts along with notes, reminders etc. the best feature being the ability to send these notes to other devices or to other phones via SMS and infrared. This is a good way of sharing your information with friends and colleagues. The phone also supports voice-dialling, voice-command and voice-recording, of up to 3 minutes. On the messaging front, the phone can store up to 150 SMS or 50 picture messages. The overall speed response of text input is also very fast.

In terms of data connectivity, the phone supports both GPRS and HSCSD for faster connections. It also supports WAP 1.2.1 for browsing the Internet, and an IrDA port for data transfer.

The phone comes bundled with four games for your entertainment, and also a mono FM radio that has 10 presets through the keypad that saves scrolling through the entire list of channels. The signal reception and voice clarity were commendable.

If you need a good phone that doubles as a PIM, then 6510 is the phone for you.

Nokia 8250

Price: Rs 10,299 B-

The 8250 is a spruced up version of the trendy 8210. This phone has the best set of clothes in the entire Nokia line up of models. The colour combination, the eye grabbing keypad layout and the exhilarating blue backlight, gives the phone its unique appeal.

The most striking feature is the ergonomic keypad layout. The navigation keys sport a beautiful butterfly shape or the X-theme that not only looks cool but is very practical. The keys are big, raised and provide excellent touch feedback—a boon for SMS junkies. The menu structure is always the same across the Nokia models, with a few additions here and there.



The 8250 incorporates many of the features, such as screensavers and SMS chat from the 3xxx series of phones. The phone book, call registration, etc are similar to other Nokia models. It doesn't come with a full-fledged calendar option, but supports reminders and notes. Furthermore, these notes can be sent via SMS, Infra red and so on.

The 8250 comes bundled with four games, good ring tones, a ring tone composer, picture editor and FM radio. It is not WAP-enabled, which takes away from its appeal. It offers an IrDA port for faster data transfer between your PC and phone.

Overall a fantastic looking phone with all the basic features, but a price that will make you flinch—Rs 10,299.

Nokia 8310

Price: Rs 15,599 B+

The 8310 is a small, compact cell phone that will surely attract the younger generation. Our review unit sported an elegant blue and grey outer shell with alternating colours for the keypad. The use of chrome for menu buttons and the navigation keys give it a retro finish. Nokia has gone a step forward to include a bright white backlight, which further enhances the overall appeal.



The phone does not rule the technology roost, concentrating more on quality rather than a quantity of features. It supports a mammoth 500 address book entries and has a dynamic memory allocation, which lets you push in more numbers if the names occupy less space. The phone can also store up to 150 SMS or 50 picture messages. It comes with a 35 pre-loaded ring tones, the usual stopwatch, calculator, currency converter and four games—including a snow boarding game, reflecting the phones Finnish origin.

Features such as WAP 1.2.1 support, GPRS and HSCSD also make their way into this phone, not to mention the evergreen IrDA port. The inclusion of a mono FM radio into the set is a refreshing idea and makes it an ideal companion on the go.

The best feature is the awesome signal reception. This was the only phone that displayed full signal strength in our test, no matter where we placed it—due to which the speech quality was excellent.

The only bitter taste in this perfect concoction is its price—It is definitely not worth the price tag.

Nokia 8855

Price: Rs 26,999 B-

Although this phone breaks the Rs 18,000 barrier set for the Smart phone category, it still finds itself here. This is because of the limited set of features that this cell phone posseses. We did not think it appropriate to let it compete with the entrants in the Also a phone category.

The 8855, by its very look, is targeted towards the upper segment, business community. Our test unit sported a dull navy blue facade with a thin chrome finish on the periphery of the display, and the sides of the phone. The sliding cover feels flimsy and reveals small, closely packed, chrome finished keys.



The menu is the very simple to use. The cramped keypad affects the typing and the last row of keys are even more difficult to work with since the cover comes in the way.

The 8855 looks stunning, but does not have the features to justify its stratospheric price. It comes with an average address book capacity of 250 and 100 calendar notes. On the messaging front, the phone supports SMS but despite being aimed for the elite, lacks MMS capability. However, concatenated messaging is included. The calendaring features are neat with options of repeating notes—weekly and monthly view—and it also has the capability of sending notes and schedules—via SMS and IrDA—further enhances the PIM functionality.

On the data connectivity front, the 8855 comes with an IrDA port and an optional cable to connect itself to the PC. The phone has support for WAP 1.1, but lacks high-speed data connectivity support such as GPRS. The phone comes bundled with 32 ring tones that can be personalised, a ring tone composer for composing custom tunes, and four games. Priced at Rs 26,999, it needs a serious price revision to stay in the race.

Siemens C55

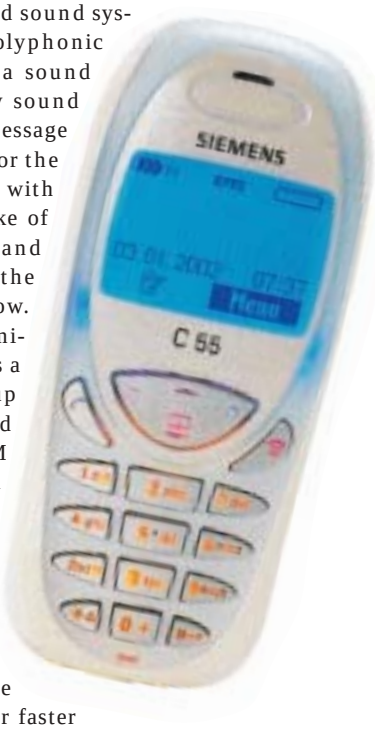
Price: Rs 9,400 A-

This cute phone from Siemens tries to break the mould with attractive packaging and looks. The uniqueness of the C55 lies in its integrated sound system.

As apposed to the previous Siemens models that lacked aesthetic appeal, the C55 is miles ahead—the phone has near perfect ergonomics and the oval theme gels well with the overall design cues. The keypad layout, with its plastic keys, is instinctive and has a good touch feedback—a boon for SMS junkies. The covers, for the first time in a Siemens phone, are interchangeable with three simple and elegant hues. The backlighting can be changed according to the colour of the cover.

The four-way navigational keypad, again a first time feature in the Siemens species, is by far the best in its class. The menu structure remains the same, except for some minor changes, but with the four-way key browsing makes navigating simpler. The C55 has a standard high resolution LCD display capable of displaying four lines of text.

The C55 has enough features to match any other phone in its class. Apart from the integrated sound system, the phone comes with polyphonic ring tones. It also comes with a sound recorder, so one can record any sound and use it as a ring tone or message alert—try setting a rooster's call for the alarm! The phone comes bundled with two java based games: the remake of the old *Prince of Persia* game and *Arachnoids - Galaxy Hero*. Both the games are playable but slightly slow.



The phone comes with a minimal 50 contact capacity, which is a tad less for this class. It supports up to 765 characters in the SMS, and also has support for EMS. The PIM functionality is very basic with only reminders and a to-do list. The other features include seven profiles, two Java-based applications and other tid bits such as calculator, alarm clock, currency converter and metric converter.

On the data transfer front, the phone is equipped with GPRS for faster connection speed and downloads, and WAP 1.2.1, but lacks IrDA port or any cable connection for data transfer. The phone displayed excellent voice clarity and signal reception.

Priced at Rs 9,400, the C55 phone offers an excellent package with features such as support for Java applications, GPRS support, polyphonic sounds excellent games and good looks. But it still can't beat the price-to-features value of the Sony Ericsson T310, which apart from these features, also offers a colour screen, albeit at the same price.

Sony Ericsson T310

Price: Rs 9,995 A

Additional features for a low price is rare, but this is exactly what Sony Ericsson offers. The T310 is a feature packed phone designed on the lines of the elder sibling the T68i.



The keypad is smartly laid out with a small five-way joystick for menu navigation. Apart from the joystick, two keys are entirely dedicated to the software menu.

The phone has a bright 256-colour LCD display that is capable of displaying five lines of text. Similar to the T68i, it has an icon-based navigation main menu, wherein all features are grouped together under a particular main menu. The grouping of menus was the best we have seen in the entire comparison. Due to the icon-based approach, it does require total attention when browsing. However, shortcut customisation reduces the searching required in the

user interface.

The phone supports all the latest features such as MMS, EMS, polyphonic tones and downloadable games. It also supports WAP 2.0, GPRS and HSCSD, not to forget the IrDA port that can be used for transferring files between devices. The phone also supports POP3 e-mail clients for sending and receiving mails with attachments. The only one thing that is missing is the PIM functionality, you can insert reminders but a full weekly or monthly view is absent.

The phone handles speech with aplomb and all in all, is a feature rich phone for an extremely irresistible price.

Sony Ericsson T600

Price: Rs 9,995 B+

This is the most compact and the cutest phone to make it to our comparison test. The phone has a two-tone finish and is available in two colours—Marine Blue and Moonlight Silver. The keys sport a silver finish with a striking blue backlight, that is visible in all the lighting conditions.

The phone has a well-sized, high resolution LCD display that can display four lines of text, and is lit with a xenon backlight, producing pastel blue lighting. The keypad, though small, in size, is quite effective due to an efficient key layout that gives access to all the required features with a few clicks. The menu structure is very simple to navigate with two dedicated navigation keys and one menu key. The grouping of various features in the menu is impeccable—all the features are where they should be. The phone has some decent features—a 250 capacity address book, speed dial setting for 8 numbers and ring tones association for 10 names. It supports concatenated SMS, group sending, EMS and SMS chat. It also features PIM functionality, where you can switch between a monthly and weekly calendar view, assign various types of events to a particular day and also set alarms for particular times.



Other frills include a calculator, currency converter, stopwatch and five exciting games. The signal reception was not up to the mark—the phone experienced speech loss and voice breaks in the interiors of our building.

The T600 phone is targeted at the fairer sex and does not have what it takes to be a business phone. Though it is probably the smallest phone in the market, it fails to justify the price tag of Rs 9,995 with its limited bag of features.

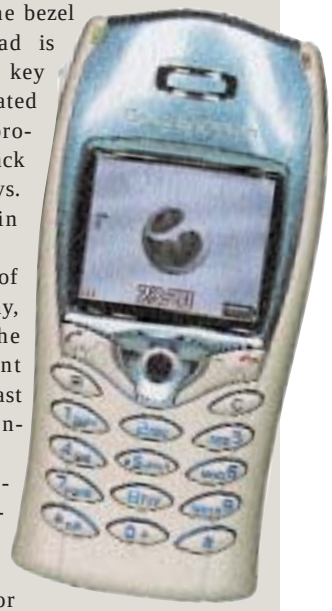
WE RECOMMEND

Sony Ericsson T68i

Price: Rs 14,995 B

This phone has been around for a year, and gives strong competition to the high-end cell phones, with its features, performance and terrific price.

The phone has an aesthetically appealing design that would set many a heart afire. The use of matt-silver colour for the body and metallic blue for the bezel make it stand out. The keypad is ergonomically laid out with no key cramping. The menu can be navigated using the slick joystick, which provides excellent audible feedback when pressed or tucked sideways. Two other soft keys also help in menu navigation.



The most noticeable feature of T68i is the 8-bit colour LCD display, which displays 5 lines of text. The 256-colour screen has excellent brightness and gives good contrast even when exposed to direct sunlight.

This phone comes with a mammoth address book entry capability of 500, apart from the additional SIM capacity. As far as messaging goes, the phone has support for MMS, EMS, POP3 e-mail client and mobile chat. Similarly when it comes to data transfer and connectivity, no other phone offers as much as this phone. The phone has IrDA, Bluetooth, cable connectivity, WAP 2, GPRS or HSCSD. An external camera can also be attached to it via the camera port at the base of the phone.

The phone also has an excellent calendar and PIM functionality, making it an ideal business companion. It comes bundled with 8 games, 32 ring tones, good screensavers and pretty decent themes. All these features provide excellent personalising options.

Though the manufacturer claims 12 hours of talk time, we expect it to be around 6 hours, which is still commendable, not to mention a stellar standby time of 320 hrs. The phone shows decent signal reception but has exceptional voice clarity with hardly any broken speech or other disturbances when talking.

The T68i is an excellent cell phone that will appeal to people from all spheres of life and, with an aggressive pricing of just Rs 14,995, leaves all other phones in this category chewing its dust.

Those Who did not Make it

Though we tried to get all the brands for the comparison, some were regrettably left out.

- Samsung failed to send in their products even after continuous follow ups.
- Philips has discontinued all their Fisio models and is scheduling a launch of new models somewhere in the second quarter of 2003.
- Though Panasonic has a slew of models on offer, they managed to send in only the GD55 model, without the charger, due to which we could not test it.
- The first Indian brand V K Munoth did not wish to get their models tested right now.



Also a Phone

WE RECOMMEND

Nokia 3650

Price: Rs 23,399 **A-**

This new release from Nokia is built on the Symbian operating system version 6.1, just like the Nokia 7650. This is a novel looking phone. The keypad is a bit of a change, and you will have to figure out which key is placed where. A five-way scroll pad, makes manoeuvring easy. However, one-handed operation is difficult, due to the cramped keypad layout. Even the top two buttons are rather small, making the contact with your fingers a bit difficult. The volume buttons have not been included on the sides.



On the software front, it is exactly the same as the Nokia 7650 except for the addition of the video recorder and the RealOne application. These applications can be downloaded for the Nokia 7650 from Nokia's Web site.

The charm of this phone lies in its price tag, the support for external memory and the 16 MB bundled stick. The backlight colour complements the colour of the phone, for example, the blue phone has a blue backlight. This could pose a problem for the white coloured phone as the readability would suffer in daylight. This is where the Nokia 7650 outsmarts the Nokia 3650, as it has a light sensor which controls the back light of the phone as per the outside surrounding giving perfect readability.

Nokia gives you Bluetooth, however disappoints us by not supporting headset profiles. Nokia Bluetooth only works with Nokia phones or its own accessories, defeating the open standard that is Bluetooth.

The model includes some minor improvements such as tri-band support, external memory support, longer battery life, Web access for XTML sites and a completely new design.

Overall, the only front that the 3650 beats the 7650 is extending support for external memory, making it ideal for power users.

\+ Tri-band, quality camera, external memory, support for viewing XHTML sites, good battery life
– Odd Keypad layout, poor SIM contact management, No cable connectivity.

Nokia 6100

Price: Rs 20,099 **B**

The 6100 phone gives you a 4096 colour display and has the capability of displaying five lines of text. The keypad has a tactile feel—the four-way scroll pad makes flipping through the menus and playing games a pleasure. The designers have wisely used the four-way scroll pad to allow you to access the calendar or the composing message menu by simply pressing the right or left scroll key.

The phone book memory can store up to 300 contacts and 150 messages, and if you so wish, you can also save a varying number of MMS messages, ring tones, images and J2ME application using the 725 KB of memory. You also have the flexibility of saving an image received as a MMS or saving it as a wallpaper.

The phones two pre-installed games, *Chess* and *Bounce*, entertain you, while one Java application called World Clock, allows you see the time in various countries all over the world.



We were disappointed with the processing power of the CPU because it takes a reasonable amount of time to open and execute Java programs. The games bundled are average and the screen flickers while playing them. Since the user is expected to pay a handsome price for this handset, one could expect a faster CPU.

The 6100 has a 'Wallet' feature, that allows you to save sensitive data such as credit card information and use it while shopping online. With respect to voice quality, we had a bad experience as there was a consistent drop in the reception where the network signal was weak. In contrast, the Nokia 7650 and the P800 did not face any such problems.

Another strange glitch was seen upon charging —we tried to recharge the completely drained battery, and within 20 minutes the battery indication showed it completely charged. However, when we tried to use it again, the indication bar dropped instantaneously. While this could have been an isolated error pertaining to our particular handset, it would pay to check the battery indicator during a purchase.

The phone is provided with a Pop-Port that can take on an external Nokia camera for snapping pictures.

Overall, a cute looking phone but it needs more features and a faster CPU to justify its price tag.

\+ Tri-band, MMS, GPRS and Wallet, good design
– Screen flickers, slow CPU, low memory, no voice-dialling

Nokia 6610

Price: Rs 16,399 B

Nokia India released this phone prior to the 6100. While the 6100 is targeted at the business segment users who want a trendy phone with features galore, this phone is meant for the entrepreneur who prefers classic looks.



The design is also strikingly similar to the 7210, except for the keypad and the scroll pad. The keys are well-placed and you don't need to struggle with them while dialing numbers or typing messages. It offers 725 KB of memory, two games, and a Java application called Portfolio. Not to forget support for MMS, GPRS and Infrared. Nokia forgot to include the CPU of the 7210 hence you may find the phone a bit-sluggish.

As usual, Nokia does not bundle Bluetooth for reasons best known to them. We do find it strange that a phone targeted at the business community can be released without this particular feature.

\+ Tri-band, GPRS, MMS, FM, well-designed keypad
– No support for Bluetooth, slow CPU, less memory

Nokia 7210

Price: Rs 22,519 B

The Nokia 7210 is one of the first tri-band phones to be released by Nokia, which has a funky cool and a very stylish look. Looks apart, this phone has a feature set very similar to the newly released Nokia 6100.



The designers have introduced a new keypad layout, which makes it difficult to operate. Moreover the backlight is white for the corner two rows, while the middle row has a green one, causing readability problems. We also found the volume button too stiff to operate with ease, just as the power button.

The software and user interface is no different from any Nokia phone—Flipping through the menus is not a problem thanks to a four-way transparent plastic scroll button.

The phone book has a memory of 300 contacts and a capacity of 150 messages. In contrast to the 6100, this one has a faster CPU and we did not notice any flickering. It also offers an Infrared, a data cable connectivity option and GPRS connectivity for the Internet.

The phone comes pre-installed with one Java application i.e. the Converter II, which allows you to convert currencies, temperatures, area, volume, etc.

The Wallet feature has not been included. Instead, an FM tuner allows you to tune in to your favourite radio station. There was no voice drop at all and the integrated speaker-phone gives you the convenience of talking freely.

This is quite a stylish phone that offers reasonably good features but it's the odd key pad layout that will deter many from buying this phone.

\+Sleek and stylish, Fast CPU, tri-band and FM stereo tuner
– Odd Keypad layout, bad backlight,noo real-time support for e-mail, no voice-dialling

Nokia 7250

Price: Rs 26,299 A-

Moving a step up in the 7xxx series of phones, Nokia unleashes the 7250, with an absolute stunning design. Unlike its younger sibling, the Nokia 7210, this one has well designed keypad. Like all Nokia colour phones, this one also has a 4096 colour display, and looks and feels like its predecessor—the major change being the camera that is activated by pressing the top scroll button. The menu structure is the standard Nokia fare and just like the 6610, the 6100 and the 7210, Nokia has pre-assigned shortcuts to the scroll keys. You can manually assign a function to the right scroll key of the phone so that it opens an application of your choice. The scroll pad does not pose a problem while navigating menus. However, while playing games you will find it uncomfortable to use, as the base of the pad is small, unlike the 6100 which has a reasonably good scroll pad.



Even though this phone is bundled with a self-timer camera and two modes namely Standard and Portrait, the image quality can be disappointing. The camera supports a maximum resolution of 352 x 288 only due to which images are blurred.

A rather amusing thing was that Nokia had initially claimed that this model has 725 KB of memory—the phone we received had a capacity of 5.2 MB of memory. After its release, Nokia still claims a memory size of 3.5 MB dynamic memory for this phone.

Despite being a new release, you cannot send an SMS to a group or to a distribution list, something that you can do with the Nokia 6100. It does support MMS and SMS, however, there is no real-time support for e-mail. This means unlike your

Nokia 7650 or Sony Ericsson P800, which support the POP3, and IMAP protocol, all this does is use the SMS gateway to send the e-mail.

Apart from the usual features that Nokia bundles, this phone allows you to set an alarm tone either from your ring tone list, the radio, etc. An all-new feature called Synchronisation has been included, which allows you to synchronise your calendar items and phone contacts with an assigned server. However, one thing which really put us off was the slow CPU speed—juggling through the menus was sluggish. Imagine the performance when your inbox is full and the phone is loaded with applications!

It seems Nokia does not include Bluetooth in phones that have FM radio; and this one has FM, hence Bluetooth is missing.

Overall, the 7250 is a sleek and trendy phone with a camera, but asks too much money for the features it has to offer.

+ Sleek looks, digital camera, 5.2 MB internal memory, FM, GPRS, MMS
– Low camera resolution, no Bluetooth, no real-time support for e-mail, no support for voice-dialling, slow CPU, no photo caller identity



Dial M for Maintenance

You've just spent your hard earned money buying an expensive mobile phone. Ensure you keep the following points in mind while handling it to avoid long term damage.

■ In a country such as India, where temperature and humidity levels are high, your phone may stop functioning in extreme cases. If this does happen, do not try to open the phone yourself instead give it to the authorised service centre and they will do the needful.

■ Avoid storing or using the phone in dusty, dirty areas as its moving parts can be damaged.

■ Never forget your cell phone in your vehicle. The heat could shorten the life of electronic devices, damage batteries, and melt certain plastic components. Similarly, in cold areas the phone warms up to its normal temperature and moisture can form inside it, damaging the electronic circuit boards.

■ Never attempt to open the phone yourself as non-expert handling of the device may damage it. Avoiding dropping, knocking or shaking it as rough handling can break internal circuit boards.

■ If you wish to knock out the dirt from the cell phones do not use harsh chemicals, cleaning solvents, or strong detergents to clean it. Just take a soft moistened cloth to wipe off the dirt.

■ Use only approved accessories and batteries. Do not connect incompatible products.

■ A new battery usually lasts for 2 years provided that you use it in the right way. Never charge the battery unnecessarily, this reduces the effectiveness of the battery. Ensure that you use the specified charger, even this affects the battery performance.

■ If you do not intend to use your mobile phone for a long time, remove the battery and put in a dry and a cool place.

Nokia 7650

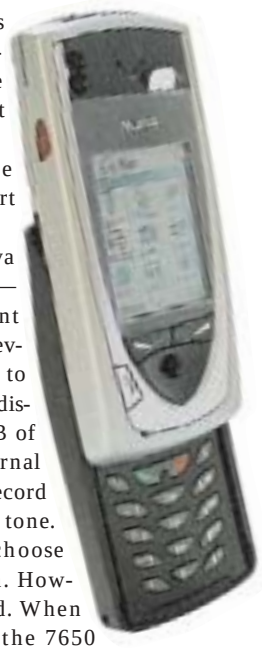
Price: Rs 26,999 A-

The Nokia 7650 is the first device running the Symbian OS. The phone has an integrated digital camera. It uses a TFT matrix, non touch-sensitive screen that has up to 4,096 colours to make your pictures look good. The screen does lose some of its sharpness outdoors, but the contrast can be adjusted and the light sensor automatically adjusts the backlight. The camera has three different modes of operation.

From the view of ergonomics, the Nokia 7650 is one of the well-designed devices. But the grip could have used a little more attention—the smooth front panel slips out of your hand easily. Moreover, since the device lacks any sort of a curve, you tend to leave imprints on the screen, especially while talking. The phone is deceptively light and uses a good sliding mehanism for its front panel.

The menu button on the front panel takes you to the general menu and the five-way navigation joystick makes manoeuvring through it a joy. You can personalise the menu by rearranging it according to your convenience.

The phonebook is expansive, with room for eight different entries per contact. You can even add details by assigning the entry a note, or identify it by adding a photo of the person. The poorly implemented interface makes viewing messages stored in your SIM card quite a pain—you first have to mark the message, copy it to a folder in your inbox and view it from there.



The calendar gives you a daily, weekly, as well as a monthly view for a complete snapshot of your schedules. However, there are only three event types to which you can set an alarm.

The 7650 has a built-in speaker phone that allows you to talk and listen from a short distance.

You can install applications based on Java to enhance the functionality of your phone—everything from zipping and call management applications, to games can be installed. However, if you are the one of those who would like to install loads of applications, then you will be disappointed as the 7650 supports only 3.4 MB of dynamic memory with no support for external memory. The voice recorder allows you to record sound and forwarding the clip or set it as a ring tone.

On the connectivity front, you can choose between infrared and Bluetooth connection. However, basic cable connectivity is not provided. When we tried to connect it to a Sony Ericsson, the 7650 refused to detect it; However, the Sony Ericsson detected it on a fly. The voice quality lives up to the high Nokia standard.

It's a pity that Nokia only upgrades the BIOS and not the software functionality in the newer versions of its existing model. Though Nokia India claims to sell this phone with a 830 mAH Li-Ion battery, we received had a 750 mAH Li-ion battery.

Overall, this is a phone that has a few path breaking features, but with its high price tag, it'll take some convincing before a prospective buyer will make the leap.

+ Unique design, ability to install Java applications, support for real time e-mail
– Very little memory, poor management of SIM contacts, no cable connectivity, low battery life, Bluetooth problems

Key to good health

■ Using your phone while driving is a punishable offence. Let the caller know that you are driving, and suspend the conversation.

■ You can use a hands-free accessory available, but making use of this while driving is also an offence under the law.

■ Even while walking, ensure you stand on the side of the pavement while talking over a mobile phone. Avoid using it while crossing roads as your attention is always diverted during a conversation.

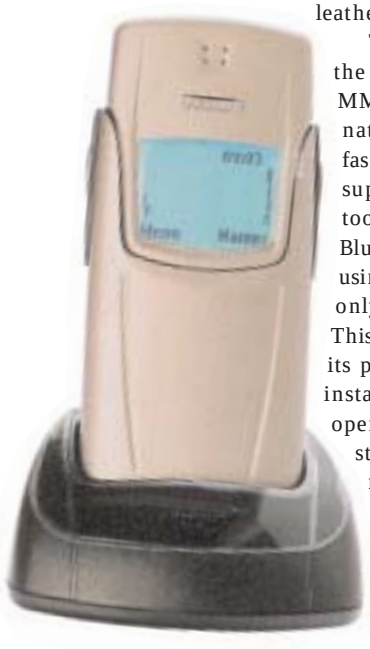
■ Always buy cell phones, that are SAR (Specific Absorption Rate) approved—it is a measure of the rate of absorption of RF energy in the body—this ensures that the radiations emitted by them are in the minimal range.

■ Keep the phone away from electronic devices as this causes EMI (electro-magnetic interference). While travelling in an aeroplane always switch off the mobile to prevent any sort of interference with the navigation systems of the airplane. Similar care must be taken when in hospitals and petrol pumps.

Nokia 8910 Natural

Price: Rs 35,499 C+

The 8910 comes in a titanium shell that aims to offer maximum protection. The sliding mechanism is great to use, and is of a good build-quality. The keys are well laid out, but a bit cumbersome due to the small size—the last row is particularly more difficult to get at as the rim of the shell interferes with the accessibility. This was one of the few phones that carried an exhaustive accessory package with it—an extra battery pack, a desktop charger, a leather pouch and a headset.



The user may be dissapointed on the software front, as it neither supports MMS nor has the facility of concatenated messages—you only get the old-fashioned four line display. The phone supports connectivity through Bluetooth, as well as Infrared. Phones with Bluetooth allow exchange of contacts using this medium—however the 8910 only allows an infrared or SMS transfer. This phone has a faster processor than its predecessor, the 8855 and you can instantly feel the difference when it opens your filled inbox. It allows you to store around 500 contacts and 150 messages.

On the performance front, this phone provided astounding voice clarity even when the signal was at the weakest. All this makes it a pretty neat phone to flaunt, if you can afford the price.

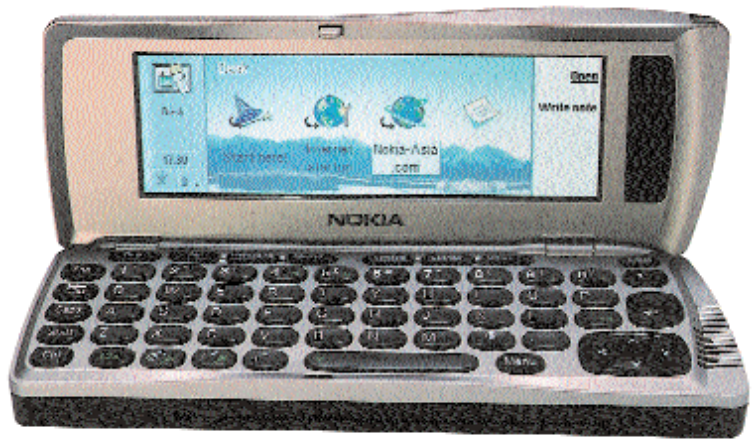
+ Titanium shell for protection, range of accessories bundled, fast processor, GPRS, voice clarity
– Small screen, difficulty in using the keys, no concatenated messages, no real-time e-mail

Nokia 9210i Communicator

Price: Rs 37,599 C

This mobile phone is targeted at corporate users and professionals who would like to have the functionality of office applications in a phone. The 9210i is quite big in size when compared to other phones with similar functionality, the grip however, is very firm. There are two display screens—the one on the outer surface is monochromatic and offers a glimpse at the basic functions of the phone, the other is a 4,096 colour screen on the inside that shows you the various PDA functions. The flip is that none of the screens are touch-sensitive. The resulting juggling with buttons takes time. The buttons are well placed and the white backlight does not hinder readability.

The Nokia 9210i offers a QWERTY keyboard on the inside panel, which allows you to type your text and insert characters. It has a Symbian operating system and a whopping 40 MB of memory, out which 16 MB is allocated for applications. Out of this 16 MB, 6 MB of applications are preinstalled, thus only 10 MB of memory remains for personal use. If you want additional memory, you can add a 64 MB MultiMedia Card (MMC).



The phone comes with a word processor, a presentation viewer, and a spreadsheet program. It has an exhaustive calendar, an updated browser with support for Java script, Cascading Style Sheet offers a better Web experience.

A voice recorder allows you to record more than 10 minutes of voice (depending upon the memory occupied) and a note application lets you to make some quick notes.

It's surprising to see that the Communicator lacks GPRS and MMS, which most of the newer set of phones possess.

This phone has good voice clarity—one thing that we did find amiss was its inability to catch a signal in sensitive areas, where other models from Nokia performed admirably. Overall,this is a phone that provides some excellent functionality but seriously requires the manufacturer to upgrade the software to compete with the upcoming models.

+ Sturdy display screen, office viewer, browser supporting Java and CSS, capability of adding external memory
– No support for Bluetooth, GPRS, MMS

Sony Ericsson P800

Price: Rs 39,995 **A-**

The introduction of the P800 is the first attempt by Sony Ericsson to break into the phone and a PDA combination market. Moreover it is the first Symbian OS v7.0 tri-band handset available. It can display 4,096 colours, and has a small keypad that contributes towards conserving space. Since the phone has a touch screen, you can flip open and make use of the stylus, placed at the side, to operate the various functions of the phone. You can also detach the dial-pad and dial with the help of the stylus. The stylus provided is quite accurate, however its build-quality is no great shakes and you tend to loose it, as the grip is not good. To make navigation simpler you also have a five-way jog dial.



It comes with an ARM 9 processor, that loads applications swiftly. It has an audio and video player that lets you watch MP4 videos and play MP3s. However, the video playback is a tad sluggish.

You can add a variety of parameters for your contacts including images. The calendar provided is quite functional showing you with a daily, weekly or a monthly view. However, there are only three types of events, appointments, reminders, or all-day events. Similarly you also have a Jotter application that lets you take notes down. An office application viewer is also included, which allows you to view Word and Excel files. It has SMS, e-mail and MMS functionality to let you communicate using both text and images.

The P800 comes with 12 MB of internal memory and a 16 MB memory stick duo card for storing pictures, ring tones, screen savers, themes, text messages, songs and third party applications. The point to be noted here is that the memory stick is proprietary, so if you plan to purchase more memory it may be more expensive than otherwise.

The P800 includes all the common connectors—infrared, Bluetooth, data cable—and ships with a USB cradle for recharging and syncing purposes. The most interesting feature is the radio-free or flight mode that ensures compatibility with sensitive devices. When you activate this mode, its phone functions will be temporarily disabled so that you can use the PDA functions of the phone while flying, or in hospitals without fear of dangerous interference.

The lithium polymer 1000 mAH battery that comes along with this phone will allow it to go without charging for around 3 to 4 days of normal usage—extensive usage will drain the battery very soon.

We recommend this only for a business phone class user, who is always on the move and will actually make use of the plethora of options offered. It would be quite a waste of resources for a casual user.

\+ Symbian 7.0 operating system, expandable memory, excellent PDA functions
– Plastic stylus,small plastic buttons, proprietary memory stick

Companions for your cell phone

Cell phones are no longer just communication devices; they reflect the owner's lifestyle and attitude. This leaves a lot of scope for customisation options and pheripherals such as car kits and hands-free sets. These accessories can be lifestyle defining or simply add-on kits that enhance and simplify the overall cell phone experience.

Let's first look at the various accessories that are available in the market for a cell phone. These accessories can be classified basically into functional—those that enhance the usability of the cell phone—and the non-functional—those that improve its aesthetics.



A Bluetooth car kit lets one control calls, keeping the hands free for driving

In the functional range of accessories, we have various options such as headsets, music stands, music players, external video cameras, desktop chargers and batteries.

Headsets have being around for quite a while now, and they can now let you make and receive calls without even bringing the phone to your ear—just plug in the ear piece and your hands are free to do other things while you receive the call.

For business users who are always on the move, a better battery life is always an added advantage. But having a spare one on an especially long trip can be quite a boon. Nearly all manufacturers today provide spare batteries and a desktop charger to charge them. Nokia even provides different types of chargers and the ACP 12E charger is the best of the lot, as it reduces the time taken to charge to 50 per cent.

Similarly, for entertainment purposes, you get MP3 and FM radio sets that can be plugged into your phone. Nokia has an add-on MP3 adapter for most of its phones, whereas Sony Ericsson offers a FM radio kit for some of its models. Nokia has recently introduced a music stand that sits on your desktop and lets you play your music through its integrated speakers.



A hands-free headset for Nokia cell phones that uses Bluetooth technology

With the advent of MMS and support from the service providers, manufacturers such as Nokia, Sony Ericsson, Motorola and Panasonic have introduced external cameras for some of their models. These cameras can be plugged into the Pop-Port and photographs can be taken using the cell phone.

Apart from these functional accessories that make you life simpler and more organized, cell phone makers have added flamboyance to their models to appeal to the easily-bored youth. Nokia, as usual has lead the way—all its models come with inter-changeable covers. Other manufacturers are not far behind.

Some other high-end models also come in their own leather carry case for protection from the wear and tear of regular use.

Personal Organic Assistant

Not satisfied with the plethora of GSM handsets available in the market? You can have a phone adorned with gold, silver or even platinum if you wish. VERTU, an independently run subsidiary of Nokia has started selling such luxury phones since 2002 in Asia, Europe and the U.S. The highlight of such phones is custom-made software, which will allow customers to receive and make calls, contact book, calendar, and of course, play games. The approximate cost of such a phone will be around $ 21,240.



The VERTU phones, which are strictly targeted for the elite segment, will be built on Nokia's technology and some of its parts. VERTU will assemble and customize the technology to suit its clients. It will also add exclusive parts, such as high-quality antennae, microphones and displays, and produce casings made out of precious metals.

Such phones are to have a special key on their side, which will allow clients to connect to a team of operators who have, for example, specialised information on travel and entertainment, and offer assistance in major cities around the world—a personal assistant of sorts.

The standard kit will come with a charger, portable hands free set, a CD and a data cable. You can also purchase a keypad, if you have the money to shell out.

Apart from the branded stuff, there are people who are willing to add diamonds and gold to your phone. Check out Web sites such as ***www.aloisson.com***, and ***www.goldcom.org***, for more information.

Drop them a line

Nokia India Pvt Ltd
Phone: 011-26779000
E-mail: k.sriram@nokia.com

Sony Ericsson Mobile Communications International AB
Phone: 011-26180808
E-mail: sudhin.mathur@sonyericsson.com

Motorola India Private Ltd
(Personal Communications Sector)
Phone: 0124-2303212
E-mail: s.sravani@motorola.com

Alcatel India Ltd
(MPD Division)
Phone: 0124-2455050
E-mail: sonal.thakur@alcatel.co.in

Siemens India
Phone: 022-24987257
Email: ContactUs@bom4.siemens.co.in

Prices mentioned are indicative in nature and are subject to change

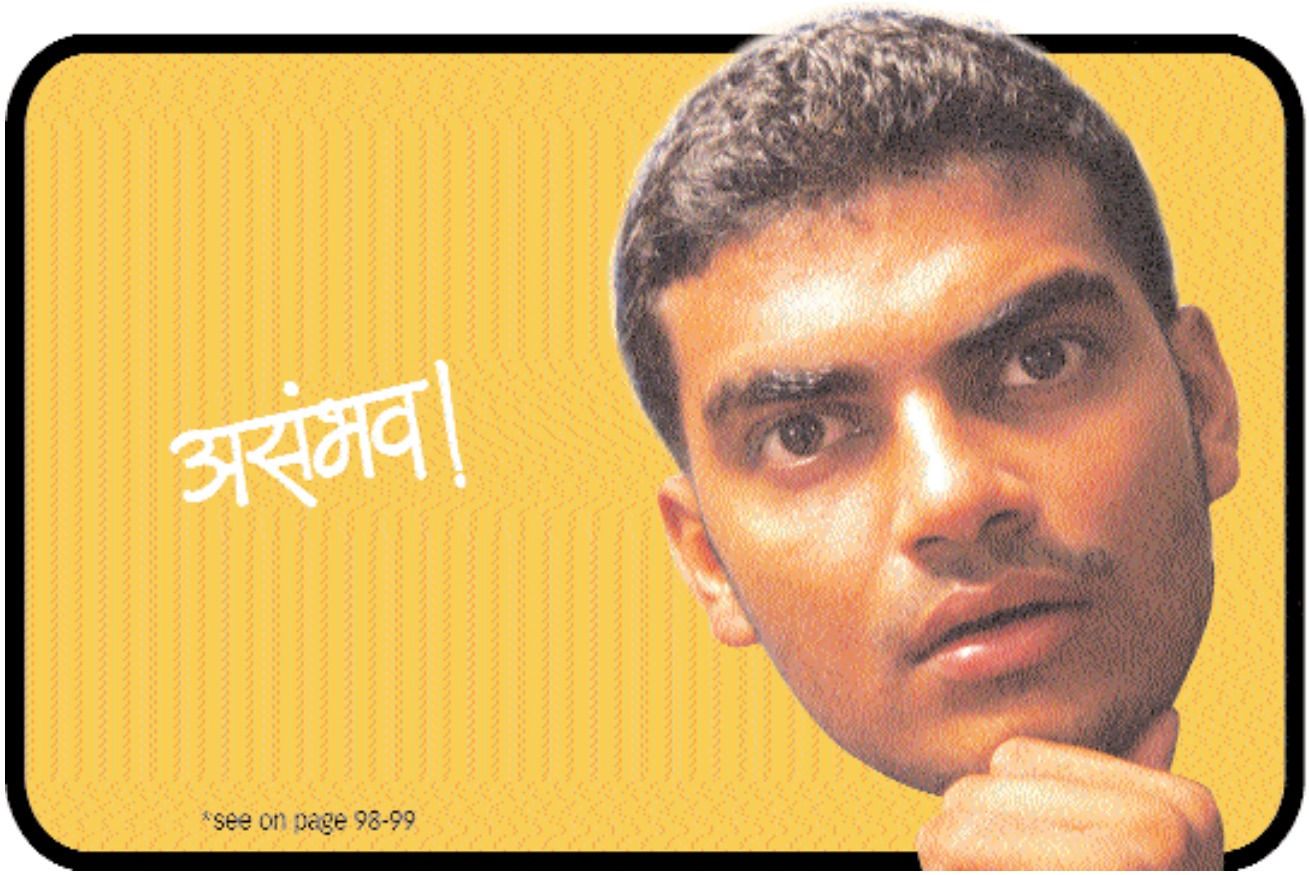
What it all leads to...

Although popular, Nokia has failed to win any awards in our test. The reason for this being that Nokia has not revised their pricing policy—their models cost nearly the same as they used to a year ago. On the other hand, Sony Ericsson has come out with models that are more feature-rich and are priced less than any comparable Nokia sets.

The Best Value award went to the Sony Ericsson T200—it costs less than the Nokia 3610 or the 3350, packs in more features than these competitors and manages to come out looking good too. A nice blend of the right price and enticing features ensured the crown that it got.

The Best Performance award went to the Sony Ericsson P800. With an ARM 9 series processor powering the excellent Symbian v7.0 OS, this phone gets off on the right foot. It won because it is an impressive PDA, a truly functional phone device, with support for external memory, a great screen, wonderful audio and video capabilities, and Bluetooth connectivity that works flawlessly.

ALIASGAR PARDAWALA, MITUL MEHTA, SANKET NAIK and AHMED SHAIKH



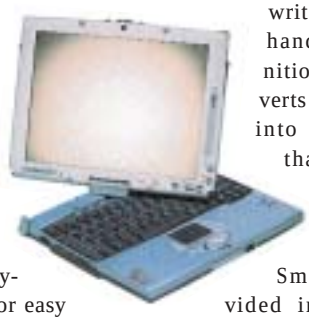
Bazaar

We test the latest and the best hardware and software products available in the market

Acer TabletPC

Take a tablet

The TravelMate C100 weighs just 1.4 Kg and measures 9.9 x 8.2 x 1.16-inches. A single hinge binds the screen to the keyboard. The four-way scroll key, located at the base of the touchpad, makes scrolling through long documents and Web pages convenient. The touchpad is responsive and the small keyboard is designed for easy text input.



To switch to Tablet PC mode, you have to push open the latches located at the side of the screen, swivel the screen clockwise, and fold it back on top of the keyboard. The screen orientation has to be changed to portrait using either the pre-assigned hardware button or the Tablet and Pen settings icon. The device comes with two electronic pens—a PDA-sized stylus that is housed in the edge of the screen bezel, and a regular-size pen. Both pens have side buttons that allow you to right-click while tapping. The regular pen also has an eraser in the form of a second electronic sensor on the top of the pen.

Based on the Windows XP Tablet PC edition, the C100 is easy to carry around and work on in the Tablet PC mode. You can use the onscreen virtual keyboard or input panel to write text. The handwriting recognition feature converts this accurately into editable text that can be inserted into any application. The two SmartCards provided in the kit are used with the PlatinumSecret software suit to provide authorised access and enhanced data security.

This canditate for the future of mobile computing is powered by its aplenty features.

SPECIFICATIONS

800 MHz mobile Intel Pentium III processor, 256 MB SDRAM, 10.4-inch TFT LCD display, 30 GB hard drive, two USB ports, Ethernet (RJ-45), modem (RJ-11), IEEE 1394 (Firewire), Infrared, optional 802.11b wireless LAN, five launch keys, four-way scroll key, built-in microphone and speakers, SmartCard slot, Type II PCMCIA slot

Price: Rs 1,59,990
Contact: Acer India Pvt Ltd
Phone: 080-5219520/23
Fax: 080-5219535/7
E-mail: ailenquiries@acer.co.in
Web site: www.acer.co.in

Acer TravelMate C100	B+
Performance	
Build quality	
Value for money	
Features	
OVERALL	

Olympus C-5050Zoom

In your eyes

The Olympus C-5050 ZOOM has a black, rugged body made of magnesium alloy. This makes it slightly heavy, which adds to the feel of a professional camera.

When set to Control Panel mode you get information about the camera status on the LCD screen. You can focus by viewing the movable LCD screen or using the optical viewfinder.

The camera allows Smart Media, xD-Picture Cards, as well as Compact Flash cards for storing pictures. Two memory slots—one accepting either, Type I or II Compact Flash cards, including the IBM Microdrive; the other accepts either SmartMedia or a xD-Picture Card. We tested the camera with the 32 MB xD-Picture Card that came bundled.

The quality of the photographs is very good. The picture quality highlights shadows and brightness very well, and details are picked up with great accuracy. In order to test the resolution, water droplets on a leaf were photographed. The results were excellent, with even the reflections of the environment visible on the droplets of water. The zoom is quite powerful without pixelation and the shutter speed, aperture size, white balance and flash type can be controlled using a button and the jog wheel.



The photographs are transferred to a computer via the high speed USB port. At a tag of Rs 49,995, the camera is reasonably priced, and is ideal for budding photographers.

SPECIFICATIONS

113.5 x 79.5 x 69.5 mm, 5 megapixel, 375 g without battery, 4 AA or 2 CR-V3 batteries, DC in, maximum resolution 2560 x 1920, Optical viewfinder, Auto Focus, image ratio 4:3 or 3:2, 1/1.8 inch CCD sensor, 1.8 inch TFT colour LCD display, Digital ESP metering, spot metering, shutter speed from 4 seconds to 1/1000 seconds, aperture F1.8 to F8.0, self timer mode, 3x optical zoom, (focal length from 35 mm to 105 mm) supports RAW, JPEG and TIFF picture formats

Price: Rs 49,995
Contact: Komal International
Phone: 022-22631366
Fax: 022-22610219
E-mail: indiaolympus@vsnl.com
Web site: www.olympus.com

Olympus C-5050Zoom	A-
Performance	
Build quality	
Value for money	
Features	
OVERALL	

Frontech Palm DV

Picture happy

Frontech has brought integration and compactness to the fore with the Palm DV. This digital camcorder can also be used as a digital camera, a Web cam, a voice recorder and an external storage device. It comes bundled with a small tripod, a quick start guide, a manual, an A/V cable, a USB cable, a sling and batteries. The driver CD has the palm DV manager, Ulead Photo Express/Explorer, VideoLive Mail, Windows Netmeeting and DVD Movie Factory.



The camera has a 1.4-inch LCD display for easy management. It is easy to operate—using the quick start guide—and the manual explains every function well. The PalmDV can be set to operate on different resolutions: VGA, 1.3 megapixels or 2 megapixels. It has 16 MB SDRAM integrated, and can store a maximum of 10 still pictures or 90 seconds of video (at 2 megapixels and high quality), and up to 20 minutes of voice recording. Stills are stored in the JPEG format (ranging from a resolution of 640 x 480 to 1600 x 1200, interpolated); video is stored in the AVI format (at 15 to 25 fps) and voice is stored in the WAV format.

The Palm DV performed satisfactorily in the tests, with no outstanding aspect to it. One might fumble with deleting pictures or exiting from the playback mode, as it is not explained in the manual. The menu scroll bar is sluggish and refuses to scroll up and down at times. When used as a removable disk, Windows only detected 6 MB of space, this is unexplained in the manual.

Another setback is the lack of a zoom utility, especially during video recording. The bundled tripod was cumbersome to attach, and when we finally managed, we were left with a camera that tilted to one side.

The price is right, it also-supports 2 megapixels on the box, although the manual could use an improvement. It is still a good buy for its price, compactness and features.

Price: Rs 11,000
Contact: Jupiter Infosys India Ltd
Phone: 022-22001211
Fax: 022-22001214
E-mail: frontech@bom5.vsnl.net.in
Web site: www.frontechonline.com

SPECIFICATIONS

Tripod stand, camera to TV audio/video cable, installation guide, driver + software CD, quick start guide, neck strap, two AA size batteries

Frontech Palm DV	B+
Performance	
Build quality	
Value for money	
Features	
OVERALL	



BenQ CRW4816A

Write on

The BenQ 4816A is a CD-ReWritable drive with a 48X read and write speed and a 16X rewrite speed.

This corresponds to a rated speed of 7200 KBps while reading and writing on CD-ROMs, and a speed of



2400 KBps on rewritable media. Since the drive uses BenQ's trademark Seamless Link technology there is no buffer under-run, which could severely affect the performance of the drive.

The CD tray is quite sturdy and comes out smoothly when the eject button is pressed. There is also a volume control, play and skip button, and a headphone jack on the front panel. It also has an analogue, as well as a digital output connector at the back. The emergency eject hole allows you to unload the disk manually in the absence of power.

The drive supports different writing modes such as Disc-at-once, Track-at-once, Multi-session, Packet writing and Raw writing. The CRW4816A was tested on a Pentium 4 2.8 GHz system with, Samsung 512 MB of RD RAM and an IBM Deskstar 40 GB hard disk drive. The drive performed reasonably while reading and writing assorted data.

The ISO and assorted write speeds are about 20 per cent less than the best drives with the same speed specifications. The CD registration speed of 12 seconds is a long time, that needs to be improved upon. It took 259 seconds to burn a 650 MB Audio CD, which means an average speed of about 2600 kbps. This recording time could have been better. The Nero average read speed of 37.4X is however comparable to the best.

One CD-RW and one CD-R media are provided *gratis* with the drive, along with Nero Burning ROM. Bundled with this is an operating guide for Nero, a users guide and an audio cable for listening to Audio CDs.

Given the satisfactory performance, standard bundled accessories and reasonable price tag. The BenQ is definitely worth a look, if a slight compromise on performance is acceptable to you.

SPECIFICATIONS

134 x 39 x 165 mm, 1 Kg, read speed 48X, write speed 48X, ReWrite 16X, E-IDE/ATAPI interface, Seamless Link (buffer under-run proof), 2 MB buffer size, compatible with Windows 95/98/ME/NT 4.0/ 2000/XP.

Box Contents: Nero Burning ROM, Audio cable, 1 CD-R and 1 CD-RW medium, user manual, Nero operating guide

Price: Rs 3,450
Contact: BenQ India Pvt ltd
Phone: 022 - 25705231
Fax: 022 - 25705235
Web site: kamleshsalunke@benq.com
Web site: www.benq.co.in

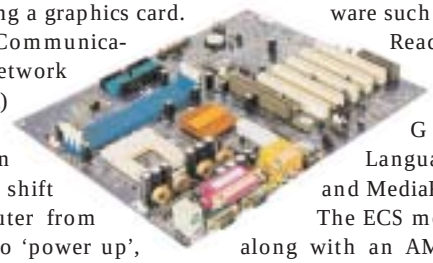
BenQ CRW4816A	B+
Performance	
Build quality	
Value for money	
Features	
OVERALL	

ECS K7VTA3 mainboard

An affordable solution

The K7VTA3 is built around the VIA KT333 chipset that combine support for the faster DDR 333 SDRAM and the AC'97 audio codec. The motherboard supports the AMD 462-pin Socket A interface, with a 100 or 133 MHz DDR front-side bus, accommodating the Athlon and Duron range of processors.

The motherboard has five PCI expansion slots, RAID support and two USB 2.0 ports, apart from two serial ports, a parallel port and a MIDI/game port. It also has a 4x AGP slot for attaching a graphics card. There is a Communications Network Riser (CNR) slot, which can remotely shift the computer from 'standby' to 'power up', over a network. The components on the motherboard are well placed, with small tabs near the CPU socket that protect the board from screwdriver slips during heat sink installation. There is enough space between the memory clips and the AGP slot to avoid inconvenience during installation. On the flipside, the ATX power connector could have been placed more towards the edge of the board.



Our testbed was powered by an AMD Athlon XP 2400+ processor, a Kingston 256 MB DDR333 SDRAM stick, an IBM Deskstar 40 GB hard drive, a MSI GeForce4 Ti4600 graphics card, and a 17-inch monitor. We ran a number of real world and synthetic tests to get a clear picture of its performance. The Ti4600 add-on card gives the system enough power to handle high-end gaming, yielding a more than adequate score of 222.3 frames per second, while playing *Quake III Arena* at the highest quality settings and 1024 x 768 resolution, 32-bit colour. The 3DMark 2001 tested the Direct3D capability of the system, which scored 9643 in the benchmark run at 1024 x 768 resolution, 32-bit colour. However, the CPU Index score of 4365 was lower than other boards.

The installation CD, also contains some useful software such as Acrobat Reader, PC-Cilin, CD Ghost, Genesys, Language Genius and MediaRing Talk.

The ECS motherboard along with an AMD Athlon 2400+ provides a good solution for Internet browsing and content creation. Hardcore gamers can install a graphics card to match their needs. Overall, this is a simple motherboard, a good choice if looking for reasonable quality at a good price.

SPECIFICATIONS

305 mm x 244 mm, ATX mainboard, Socket 462, VIA KT333 chipset, 3x DDR 200/266/333 slots accommodating a maximum of 3 GB memory, 5 PCI slots, 2x IDE connectors, IDE RAID support, Communications Network Riser slot, 2x USB 2.0 ports, 2x PS/2 ports, 2x serial ports, one parallel port, one MIDI/game port, jacks for microphone, Line-In and Line-Out.

Box Contents: User's guide, installation CD, ATA 100 cable floppy drive cable

Price: Rs 5,500
Contact: Great World tech Pvt Ltd
Phone: 022-23892828
Fax: 022-23879020
E-mail: sales@gtechworld.com
Website: www.ecs.com.tw

ECS K7VTA3 mainboard	B+
Performance	
Build Quality	
Value for money	
Features	
OVERALL	

Samsung SV0401H

Quiet data access

Samsung's latest VL40 series hard drive is a compact version of the old V40 series. PC users are often dissatisfied with 20 GB hard drives, and look for upgrades. For home users, speed less important than capacity, and many will find this 5400 rpm, 40 GB drive acceptable.

The hard drive was tested with a 2.8 GHz Pentium 4 processor, 512 MB Kingston DDR 333 SD RAM, a GeForce3 graphics card and a 40 GB IBM Deskstar primary hard drive. The drive to be tested was connected as the secondary master with Ultra DMA enabled for faster access.



The SV0401H has a low CPU utilisation of 2.3 per cent, which prevents strain and leaves the processor free for other tasks.

The random read and write speeds are pretty good, making it an ideal choice for hard disk intensive applications, such as PhotoShop. In the SiSoft Sandra benchmark, it clocked a good sequential read speed of 25 MBps and write speed of 24 MBps, for a home user. The disk gave an average drive index score of 17334. If you want to transfer large amounts of data, you should consider a 7200 rpm drive.

This drive is a good entry-level buy as it is very silent and comes with a three-year warranty. It will suffice for Internet browsing, word processing and database management.

SPECIFICATIONS

0.67 x 4 x 5.75 inches, 0.55 Kg, 5400 rpm, ATA 100 interface, 2 MB buffer, 512 Bytes per sector

Price: Rs 4,350
Contact: Samsung India
Phone: 011 - 5151 1234
Fax: 011 - 5160 8820
E-mail: marketing@samsungindia.com
Web site: www.samsungindia.com

Samsung SV0401H	B+
Performance	
Build quality	
Value for money	
Features	
OVERALL	

McAfee VirusScan Home Edition 7.0

Fortify your PC

The latest McAfee VirusScan Home Edition includes many new features, such as HAWK (Hostile Activity Watch Kernel), that runs in the background and monitors activity on your PC. We tested it on a Pentium 4 2.0 GHz processor on an Intel D845GEBV2 motherboard, 128 MB DDR SDRAM and a 40 GB Seagate ST340016A hard disk drive.



It scans e-mails for viruses, worms, scripts and other malicious code, while remaining up-to-date by automatically downloading the latest virus definition files. A good feature is the inclusion of a firewall—McAfee Guardian. This firewall gives detailed information regarding the Internet activity on your machine. It comes with an easy to use wizard called Configuration Assistant, which lets the user set up the firewall in just five small steps. Switching between the

1/2 p V AD

VirusScan and the Firewall is easy as it has a browser like interface, with buttons for navigation.

VirusScan also includes support for PDA synchronization scanning. Thus, it detects any malicious code, which tries to gain access while transferring files from your PDA to your PC. A new inclusion in VirusScan is the Script Scanning utility that makes your PC more robust and resistant to attacks by malicious scripts.

Priced at Rs 2,500, it's a definite buy for the security conscious user looking for new antivirus software. There is no need to buy this if you already have other virus software.

SPECIFICATIONS

System Requirements:
Microsoft Windows XP, 2000 Pro, Windows Me, or 98, 32 MB RAM, 61 MB hard disk space, Pentium 100 MHz processor, Internet Explorer 4.01 SP2

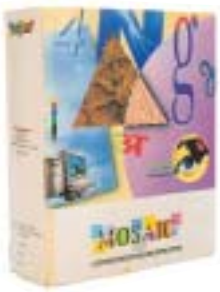
Price: Rs 2,500
Contact: Network Associates
Phone: 022-56935278
Fax: 022-26650078
E-mail:custserv_apac@nai.com
Web site: www.nai.com

McAfee VirusScan Home Edition 7.0	A-
Performance	
Ease of Use	
Value for money	
Features	
OVERALL	

Mosaic

Half cooked Indian curry

Mosaic, from Abacus Software, promises features such as multi-language support, support for popular and customised keyboard layouts, a library of 50 in-built fonts and support for third-party fonts. Amusingly, the actual product came with just one font! When contacted, the vendor informed us that a buyer has to pay extra to get additional fonts and keyboard layouts. This increases the total cost of ownership.



There is absolutely no documentation, and the two pages we received were basically printouts of the features listed at the Web site. The help feature does not work properly and at times causes I/O failures and insufficient memory errors, even though the test machine had tons of memory. While a spellchecker is included with the software, it does not have a default dictionary—you have to make your own dictionary from scratch.

The best thing about this software is its inherent support for laying-out typed material. The product failed miserably on almost every other front. Only if the bugs are fixed and all the features delivered, will this product become desirable.

SPECIFICATIONS

System Requirements:
Microsoft Windows 98, 16 MB RAM, Pentium 100 MHz processor, 10 MB HDD space

Price: Rs 2,500
Contact: Abacus Computer Ltd
Phone: 022-22040888
Fax: 022-22872309
E-mail: pankaj@abacusindia.com
Web site: www.abacusindia.com

Mosiac	B-
Performance	
Ease of Use	
Value for money	
Features	
OVERALL	

Gigabyte Optical Mouse GM 2C

Giga bites another pie

Gigabyte technologies have introduced an optical mouse, in a move towards becoming an all-round IT hardware solutions provider, working on the strength it has created in the motherboard segment.

The mouselooks good with its metallic blue and silver coloured plastic case—a shiny surface that is a trademark of most Gigabyte products. It is not too heavy, but is quite large and fits in the palm well. The mouse has the standard two buttons and a serrated scroll wheel, which is slightly stubborn and has a response time that is not ideal for playing computer games. The mouse has well designed buttons and three rubber pads at the bottom to allow smooth, uninhibited movement.



While the scroll button is a hindrance, the mouse itself is sensitive. The buttons are well spaced to prevent accidental clicking. For compatibility with older motherboards, Gigabyte was kind enough to provide a USB-to-PS/2 connector.

The mouse is priced below the thousand-rupee barrier and is a reasonable buy for the quality it offers. We would definitely recommend this device for people looking for an attractive optical mouse.

SPECIFICATIONS

Optical mouse, USB or PS/2 connectivity, 2-buttons with scroll wheel, Win9x/NT/2000/Me/XP compatible

Price: Rs 900
Contact: Tirupati enterprises
Phone: 033-22423861/2423868
Fax: 033-25543255
E-mail: mail@tirupati.net
Web site: www.gigabyte.com.tw

Gigabyte Optical Mouse GM 2C	B+
Performance	
Build quality	
Value for money	
Features	
OVERALL	

Mouse FP

Security at your fingertips

The Mouse FP combines the advantages of an optical mouse and biometric security to produce a winning combination. A technology called Surface Enhanced Irregular Reflection (SEIR) and a CMOS image sensor captures your fingerprint and displays it on the monitor for identification. The mouse is slightly larger, sturdily-built and has great manoeuvrability. It has programmable buttons and a scroll-wheel.



The installation CD makes the set up process easy and orderly. To setup the process, log on with administrator privileges (in Windows 2000 or XP), enrol your fingerprint, and select a user ID and logon password. The software also helps you to encrypt important folders on your computer.

To log on, simply place your finger on the transparent window that is present on its side and the logon com-

pletes instantly. However, there is a way of bypassing the security—logging on in safe mode in Windows 95 or 98 stops the drivers from loading, and gives access to all the files.

It aims to offer decent security in a low-security environment like that of an office. With a price tag of Rs 9,900, the it finds itself in a niche product category.

Price: Rs 9,900
Contact: Print Electronics
Phone: 022-56624555
Fax: 022-24135883
E-mail: darshan@printelectronics. com
Web site: www.secugen.com

SPECIFICATIONS

37 x 64 x 128 mm, 150 gms, 160 cm cord, USB connectivity, less than 1 second verification, 13.6 x 16.2 mm sensing area with inbuilt CMOS sensor, includes driver CD, user guide

Mouse FP	A-
Performance	
Build quality	
Value for money	
Features	
OVERALL	

Powercom Black Knight UPS

Compute, uninterrupted

Powercom, one of the leading manufacturers of power protection products, is weaving its way into India. The Powercom Black Knight UPS is well packaged and designed, with three power sockets, a serial cable to interact with the computer and even a telephone cable to offer surge protection for your modem. There is no quick set up guide and the manual is a bit technical, but very neatly organised.



The Black Knight is compact and protects all devices connected to it from power failures, surges and lightning. The UPS has an automatic voltage regulator—that provides optimal power supply, and a circuit breaker, that protects from short circuits and overloads. The UPS provides protection for a maximum of one cabinet, a CRT/LCD monitor and a modem—via a powerful battery—capable of a cold start and recharging up to 60 percent, five minutes after power restoration.

The bundled software, UPSMON, monitors voltage, frequency, battery and load levels. You can also set timings—such as the time it takes to shut down after a power failure, or when its battery is low on power and also schedule a shutdown. The software also maintains a log, thus providing details for later perusal.

Unfortunately, in an emergency no other device can be connected to the UPS as its power cords can be used only with a printer, cabinet or a monitor.

Price: Rs 3,650
Contact: Zeta Technologies
Phone: 022-24102288
Fax: 022-24102277
E-mail: tejas@zetaindia.com
E-mail: www.powercom.co.tw

SPECIFICATIONS

Capacity 600VA, 100V to 240V input 5% (auto sensing), Transfer time 2/4 ms, Lead acid Batteries 3-6 years lifetime, 6 hours full recharge time, 25-35 minutes backup time, 6.5Kg, 97x320x135 mm, RS 232 interface

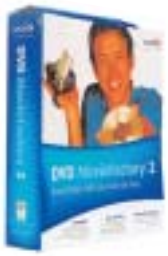
Powercam Black Knight UPS	B+
Performance	
Build Quality	
Value for money	
Features	
OVERALL	



Ulead DVD MovieFactory 2

Burns DVDs, not pockets

This product is primarily targeted at the home user. It uses a wizard-based interface to make movies. Although an excellent feature for novices, more experienced users might find it tedious.



Creating a movie is simple—just start a new project with the wizard, choose any of the three formats (DVD, VCD or SVCD), and you're all set! The Direct to Disc option in the wizard uses the DV-In DVD-Out capability; you can record from a camcorder directly onto the CD or DVD without storing on the hard disk—though, without a wireless camcorder you will be limited to the length of the connecting wire to your PC or laptop.

It supports the Windows QuickTime MOV format, amongst others and the Photo Express bundle is an advantage, as one does not need additional tools to burn CD or DVD labels. At a price of about Rs 3,000, this is one of the cheapest products in this category. Ulead DVD MovieFactory 2 makes movie making fun and easy and is recommended for novices.

Price: Rs 2,800
Contact: Micrographics
Phone: 011-22092423
Fax: 011-22099648
E-mail: micrographics@vsnl.com
Website: www.ulead.com

SPECIFICATIONS

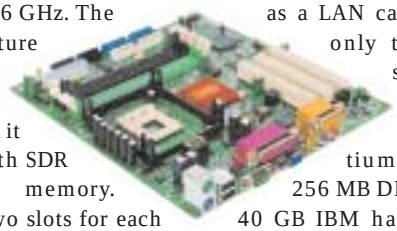
Box Contents: Ulead Photo Express 4.0, My Custom Edition Plus, DirectX 8, Windows Media Player, Apple QuickTime, and Adobe Acrobat Reader

Ulead DVD MovieFactory 2	B+
Performance	
Ease of Use	
Value for money	
Features	
OVERALL	

MSI 650GLM COMBO

All-aboard Integration

The MSI 650GLM Combo motherboard is built on a Micro-ATX board that fits easily into your computer cabinet. The board has a 478-pin socket for Pentium 4 processors, and a 400 MHz front side bus (FSB) that supports processors up to 2.6 GHz. The special feature of this motherboard is that it supports both SDR and DDR memory. There are two slots for each type allowing for a maximum of 2 GB of memory.



It has two USB ports and an additional USB header, where extra USB devices can be connected via the extension. As the board is small, there are only three PCI slots and no AGP slot—you have to settle for the onboard SiS 650 graphics chipset. The BIOS is hardwired and will be difficult to replace in case of a malfunction. The absence of an onboard LAN is also notable, as a LAN card will leave only two free PCI slots.

We used a Pentium 4 2.2 GHz, 256 MB DDR SDRAM, a 40 GB IBM hard disk on a 17-inch monitor to test this board. It performed adequately in the PC Mark 2002 and 3DMark 2001 tests, with some tests being skipped due to lack of hardware support. When running *Quake III Arena*, it clocked 70.1 fps in normal mode and 28.3 fps in high quality. This fps score is just enough for casual gamers, though not enough for networked gaming. We couldn't run Content Creation 2003—it crashed every time we ran it—and SiSoft Sandra indicated that the board is sufficient for word processing and Web browsing.

Price: Rs 2,800
Contact: Priya Ltd.
Phone: 022-22663611
Fax: 022-2664154
E-mail: sales_bom@priyagroup.com
Website: www.msi.com.tw

SPECIFICATIONS

Micro-ATX, 400 MHz Front Side Bus, 478-pin socket for Pentium 4, supports 1.7 GHz to 2.6 GHz speeds, SiS 650GL and SiS 962L MuTIOL Media I/O chipsets, supports both DDR and SDR SDRAM (maximum 2 GB), 3x PCI slots, 2x USB 2.0 ports

MSI 650GLM COMBO	B+
Performance	
Build Quality	
Value for money	
Features	
OVERALL	

Che-ez Spyz Digital Camera

Say che-ez

Spyz is slightly larger than a matchbox and comes in silver and metallic blue. It bundles a dog tag and an USB cable, but oddly, misses the battery. The software bundle comprises the Che-ez manager, Arcsoft Photo Studio 2000 and the driver CD.



The manual explains features such as sound beeps, LED and LCD displays very neatly. The device can take up to 26 photos in the high-resolution mode of 640 x 480 pixels, and 107 photos in the low resolution mode of 320 x 240 pixels. Other features include a timer and continuous capture that turns the camera into a camcorder. The Che-ez Manager also lets you convert frames into a movie in AVI format.

The Spyz can also act as a Web camera when used with the Che-ez Manager or MS Netmeeting. However, sometimes the manager does not recognise shortcut keys such as the [Alt] + [F4] combination for closing the program. The interface is also very basic and below par.

The price tag may justify all the features of the Spyz, but the management software has too many drawbacks to ignore. Also, there is no provision for an additional memory card. Although Spyz is difficult to compare with the other cameras in the market, it's a better bet than any other camera offering this resolution.

Price: Rs 4,995
Contact: Enkay House
Phone: 022-24939835
Fax: 022-24962710
E-mail: janhanvi@enkayindia.com
Web site: www.che-ez.com

SPECIFICATIONS

0.35 megapixel, CMOS sensor, video clip duration 8 sec (high) and 28 sec (low); 8 MB SDRAM; BMP storage format, Lens: 2.8 mm, 6.2 mm; Automatic exposure and white balance; USB interface; Dimensions: 60 x 38.6 x 15 mm; Weight: 34 gms

Che-ez Spyz Digital Camera	B+
Performance	
Build quality	
Value for money	
Features	
OVERALL	

Burning (CD-)ROM

Agent 001 burns for a CD-Writer

'Low Disk Space'! Not a great message to see one fine Sunday morning. I had planned to spend the day tinkering with my computer, and had begun copying some MP3 CDs I had borrowed from a friend the day before. I constantly swap MP3s, freeware and other stuff that I download with my friends—thanks largely, to my always on cable connection. The low disk space error was the last straw. I decided to change my plans, and finally get that CD-Writer I had been planning to buy for some time now.

My old 32X CD-ROM drive had outlived its usefulness and was also giving me a lot of read errors. With a new CD-Writer, I could free up a lot of hard disk space, by archiving the GBs of MP3s, movies and freeware I had stored.

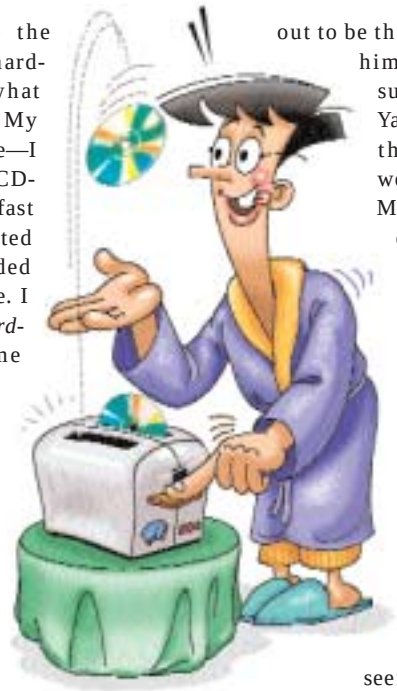


ILLUSTRATION: Mahesh Benkar

After a quick trip to the ATM, I visited my local hardware guy to check out what models were available. My requirements were simple—I needed an internal IDE CD-Writing device that was fast and cheap, made by a reputed brand and one that included the latest burning software. I was hoping the local *hardwarewallah* would guide me to the best model available. Easier said than done! I discovered that there are tons of options to choose from—there was LG, Samsung, Plextor, Yamaha, Iomega, Sony, BenQ, ASUS, and quite a few others I had never even heard of. Speeds ranged from the latest 52X to the older 32X write speeds. Devices that could write at 48X were the most popular. All of them included the audio cable, and most had the interface cable and Nero Burning ROM as the bundled software. Samsung even had a combo CD-RW/DVD-ROM drive that really got me interested. Not only would I be able to burn CDs, I would also be able to play the DVD movies that some of my friends had! I decided to explore further and—as the TV commercials say—to make sure I got the 'best deal'.

I headed out to the hardware-*mandi* of Mumbai, Lamington Road, and asked a couple of vendors about the options. I discovered that at close to Rs 3,000, the Samsung 48X CD-Writer was the cheapest, while the Plextor 48X was one of the most expensive at about Rs 6,500. The Sony 52X was available for Rs 4,100. One of the dealers here recommended the LG 52X drive, priced at Rs 3,350. The Samsung 48X combo drive was available at Rs 4,800, but the dealer advised me against it, as it hadn't got a good customer feedback. Instead, he suggested that I buy either a plain vanilla Samsung or LG one, and opt for a separate DVD ROM drive, as the total price would approximately work out to be the same. When I asked him about other brands such as ASUS, HP and Yamaha, I was told that these had not been well-appreciated either. More confused than ever, I decided to take a break.

After a lot of thought over a cold drink, I called up a friend and got the number of his dealer in Andheri, a suburb of Mumbai. I was in for a shock—the prices this dealer quoted were significantly higher than the Lamington Road dealers. It seems that location matters a lot, with dealers in areas such as Andheri, Bandra and Khar quoting higher prices. For instance, the Sony 52X CD-Writer costs Rs 5,000 in Andheri, as compared to Rs 4,100 at Lamington Road. Similarly, the LG 48X drive costs Rs 3,800 in Andheri, as opposed to Rs 3,350 you can get it for at Lamington Road.

I went back to the Lamington Road dealer, and though he did not seem happy to see me again, he patiently answered my questions about the media. On enquiring, I discovered that 52X compatible blank media were simply unavailable and 48X was the best that could be obtained. Thus, buying a 52X CD-Writer would not really help as it would be slowed by the blank media I used. Following the motto of better safe than sorry, I dropped my plans for the combo drive and chose to buy a vanilla CD-Writer.

I decided on the LG 52X/24X/52X drive, under the assumption that the 52X compatible blank media should be available soon. Then I would really be able to churn out CDs faster than you could say "Burn baby Burn!" Meanwhile I will have to settle for the burn speed of the 48X, and the 6 GB of hard disk space I just freed up.

SHOPPING TIP

- In contrast to spin speed, lower access times are better. Access time is more important if you are planning on running titles where the information you're seeking is scattered and not sequential. This information can be obtained from the manual of the drive.
- The CD-Writer should support oversizing and over-burning, as well as technologies such as Burn Proof.
- The writer must support TAO, DAO, and Multi-Session and Incremental Packet writing for CD-RW.
- Choose a writer that has support for RAW Writing.
- See to it that the drives have the required bundled software. Check if the drive is bundled with DOS and Win 3.x drivers.
- The higher the speed, the better a CD-RW will be able to perform, because the computer will transfer information to the drive more quickly. Note that compatible media must be used to take advantage of this.
- Confirm that the audio cables and other cables such as IDE cables come with the drive.
- The warranty period for the CD-Writer should be at least one year.



PHOTOGRAPH: Mexy Xavier

It's starting off carrier wars all over the country—but can WLL-CDMA services possibly be the ones to get India connected?

Where there is a WLL there is a way...

It's not what kind of network you use, it's about what the network can offer you. We've all heard about how the last mile connectivity can turn out to be hideously expensive. Cell phones are continuing on their onslaught to takeover the world, and though it has been several years since the introduction of cellular communication services in India, it still hasn't brought the vast majority of us Indians closer to a phone. We still have a very low tele-density. Here comes the new kid on the block, WLL, (standing for Wireless in Local Loop), it may be just be our networking solution. It's been touted as the one that will get one billion Indians connected to a phone line. The introduction of WLL services has also highlighted a newer digital communications technology, the CDMA (Code Division Multiple Access) wireless technology.

WLL it, won't it?

WLL is a new communications access method that uses radio waves for the transmission of information between customers and service provider sites ('the exchange' or central office). This is unlike the traditional methods where a fixed copper or optical fibre line is used to connect the subscriber to the nearest central office. In the traditional copper-wire setup, the two-wire connections between each subscriber's telephone and the local central office, is known as the local loop. With the WLL link, the service provider can avoid the expense of laying out copper cables to the subscriber's home. While most urban areas are well laid out with the requisite cabling, it is not very hard to implement WLL services in areas that are inaccessible or remote. This is where the beauty lies. WLL could step in to provide connectivity in rural areas, as WLL networks are easier to set up than regular landline networks. With a WLL network in place, the service providers can increase the capacity of the network without having to dig and layout new cabling.

Since WLL is a wireless access method that uses radio waves to connect the subscriber to a local central office, it can be implemented alongside a regular PSTN (Public Switched Telephone Network), or be combined with digital wireless technologies, such as CDMA (Code Division Multiple Access) and GSM. The use of a WLL system alongside a CDMA network has been very successful worldwide and for a good reason. Here in India, MTNL started WLL services in December 2001 and BSNL has been toying with it for quite some time now. But, what has really made WLL a buzzword is the entry of telecom biggies, such as Reliance Infocomm and the Tata group. WLL-based networks are coming up nationwide and promise quick and immediate access to telephone services and cheaper calling rates. They also offer the likes of broadband and multimeda-rich content on your handheld, when the upgrade to the next generation standards takes place. With the WLL link in place, subscribers might soon have the best of both worlds—a phone on demand and access to a slew of multimedia-rich content, making the phone an entertainment device. As most of the WLL services in India are being launched on the CDMA platform, we get the advantage of using the CDMA technology—a comparatively newer technology than the existing GSM standard.

In the mobile, wire-free world of today, the dominant technologies are GSM (Global System for Mobile communications) that started out as an European standard, and is now commonly used in Europe, Asia and Africa. The other is CDMA, which has been implemented in North America, Japan and Korea. Wireless communication systems are designed to use the radio spectrum to send and receive information through the air. While the spectrum may appear to be a

The wireless cocktail party

This is a really interesting way to understand the various methods of channel allocation, called the Cocktail Party Theory. Imagine a large room filled with a variety of people. The TDMA users are those who need to use the specific time slots to say their bits, and they take turns to cycle around their time slots and converse with each other. In FDMA, the users are grouped into widely separate clumps, with each one holding conversations at the same time, but independent of the others. The CDMA folks, on the other hand, are the people who converse with each other all at the same time. To differentiate between one another, one pair in the cocktail party speaks Tamil, another speaks Hindi, a third speaks French and so on. The Tamil-speaking couple just hones in on the Tamil and ignores everything else as random noise. The Hindi-speaking couple does likewise, and so do the French speakers. The key to CDMA is to extract the desired signal while rejecting everything else as random noise.

vast and infinite resource, with just about everybody laying claim to significant usable chunks of it, in reality, it is a scarce resource. The essential differences in the two systems are in the techniques of allocation and usage of the spectrum.

Spread that spectrum

CDMA is a digital wireless technology that makes intelligent use of the radio spectrum. For all mobile wireless services, there is a fine line between the number of users and their total capacity. It is a classical problem—you need sufficient bandwidth to maintain a decent quality of service, but not so much that it becomes vastly unprofitable. In order to make efficient use of the radio spectrum, multiple access technologies were designed that divided the allotted spectrum by time or frequency, thus letting a number of users make use of the communications system. The division of the spectrum on the basis of time is known as TDMA (Time Division Multiple Access). Here each user is allotted a time slot on a specific frequency after the expiry of which, the time slot is then used by another user. TDMA thus tends to work in a round-robin fashion.

The other technique used is allotting frequency-based slots to all the users. This is known as FDMA (Frequency Division Multiple Access). Here each user is allocated a frequency i.e., a radio channel that remains in use till the user has terminated the connection. Once the channel is free, it does not get reallocated or cannot be used by other users to increase capacity. Hence it tends to be a wasted resource. The interesting thing here is that most of the digital wireless technologies depend on either TDMA or FDMA, or a combination of both, to solve the channel allocation problem. Here is where CDMA comes in—as a channel allocation system. It doesn't divide the spectrum in terms of time or frequency, instead it allows all users on a CDMA network to share and occupy the same frequency, at the same time. CDMA allows each station to transmit over the entire frequency spectrum all the time. The multiple simultaneous transmissions are separated using coding, where each conversation is uniquely coded and can be understood only by the party that is called.

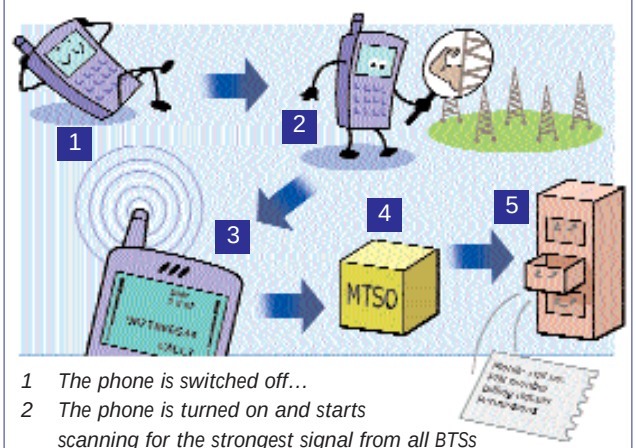
CDMA uses a form of the Spread Spectrum technology. The principle of Spread Spectrum theory is the use of a larger bandwidth carrier wave than is required to transmit the message signals. The carrier waves essentially cloak the message signals and provide the required bandwidth to transmit the message. Here the narrowband message signal is 'spread' over the carrier wave and hence the name. At any given time all the stations use the same carrier frequency to transmit at the same time and are operating independently of each other, with one user having no knowledge of the other. To ensure security, each of the multiple simultaneous conversations are encoded with a chip sequence or code. The intended recipient of the signal performs a time-correlation operation to detect the specific desired codeword. All the unsynchronised signals then appear as background noise. This lets the recipient home in and lock into the desired signal, apply the user's code and recover the message.

CDMA can be implemented in both 2G and 3G networks—the commercial deployment since 1995, was pioneered by Qualcomm, which holds several patents to components of the technology. The 2G implementation of CDMA is called cdmaOne, and is based on the IS-95 standard. There are two modified standards to the IS-95, the IS-95 A and B. They differ in data throughput, with IS-95B coming close to 115 Kbps.

The CDMA architecture

The typical CDMA network architecture consists of four major components, namely the mobile phone or the handheld, the Base Station Transceiver Subsystem (BTS), Mobile Telephone Switching Office (MTSO) and the Public Switched Telephone Network (PSTN). The PSTN provides the access to conventional landline phones located in individual homes and offices. The network topology of CDMA consists of relatively high-powered BTSs that are strategically located and sufficiently dispersed within the region to ensure a proper quality of service. GSM on the other hand, uses lots of relatively low-power transmitters that are clustered together. Here, the same frequencies are reused in neighbouring BTSs, unlike in

When you Switch on the Phone



1 *The phone is switched off…*
2 *The phone is turned on and starts scanning for the strongest signal from all BTSs*
3 *Once it catches a strong signal…*
4 *The phone pages the MTSO…*
5 *The MTSO updates the HLR and registers the phone*

GSM where the frequencies are used with a certain buffer space. This is essentially one of the reasons that CDMA networks are easier to set up—and this also has the additional payoff of better spectral efficiency.

The BTS consists of a several transceivers that can simultaneously handle full duplex communications, and generally have towers that support several transmitting and receiving antennas. The BTS adjusts the transmitting power of the mobile phones that it services and takes care of several CDMA call processing functions. It takes the digital signal from the MTSO and encodes and interleaves it. This ensures redundancy and takes care of error correction coding. At this point, the digitised voice signal is then encoded to separate it from all the other voice signals. After this, the encoded signals are channelised or spread over the entire bandwidth of the CDMA channel. Finally, the channelised data is combined into one analogue RF (Radio Frequency) signal, which is transmitted over the air. The BTS thus serves as a bridge between all the mobile phone users in the area and connects the simultaneous calls via high-speed cable links or microwave radio links to the MTSO.

The MTSO is the nerve centre of the operations—similar to central offices in the telephonic system, the MTSO handles all the control processing, and along with the switching network, maintains the updated database of subscribers and billing records. The MTSO also takes care of compressing the digitised speech signals for more efficient transmission over the scarce radio spectrum. This is known as vocoding. To communicate with other MTSOs, BTSs as well as the PSTN, the MTSOs use a switching network that makes the actual physical connection between a consumer on the radio side of the system and the consumer on the PSTN. The switching network in turn routes calls, implements all call features, as well as stores the billing records and interpreting dialled phone numbers. The MTSO or Switch also stores the Home Location Register (HLR). The HLR is the official database of all the customers on the wireless system. The HLR may be located at another more centralised location, where several switches can query it. It generally holds the information about the phone, its technical parameters, and the subscriber's account status. The HLR also keeps track of whether the phone is turned on, and if so, which switch is currently serving the phone.

When a mobile phone is switched on, it first scans through the group of preset control channels, to select the BTS that beams out the strongest signal. The mobile phone then registers with the system to inform that it is up and ready to send and receive phone calls. The phone then monitors that control channel till the signal drops below usable strength. At this point, the mobile phone scans all the control channels in search of the strongest signal. Since the control channels are standardised throughout the entire region or country, all phones scan the same channels, whilst on standby.

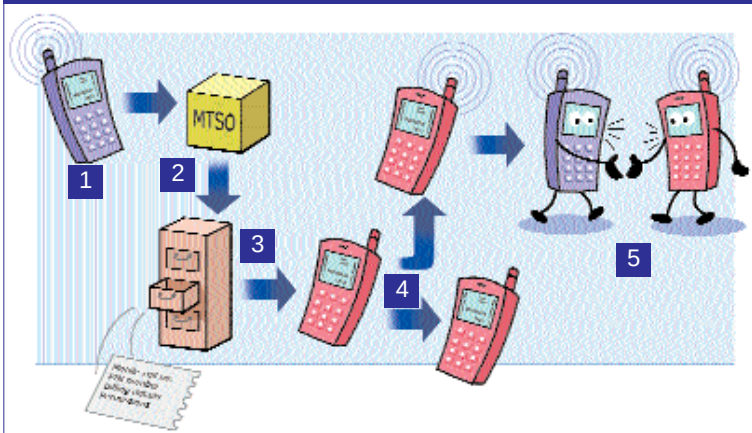
Hello, operator?

When a telephone call is placed to a mobile phone, the system checks with the HLR for the current location of the phone and pages the phone's identification number—the subscriber's telephone number—over the control channels. The phone then recognises the paged message and sends back an acknowledgement to the strongest BTS. The MTSO then instructs the BTS to move the call over to an unused voice channel, and the BTS then responds by instructing the mobile phone to move over to the correct frequency. The phone acknowledges the transmission and jumps over to the assigned voice channel. At this point of time the mobile phone alerts the subscriber of an incoming call with a ring.

When the user of a mobile phone initiates a call, the initiation request is sent to the BTS that contains the mobile

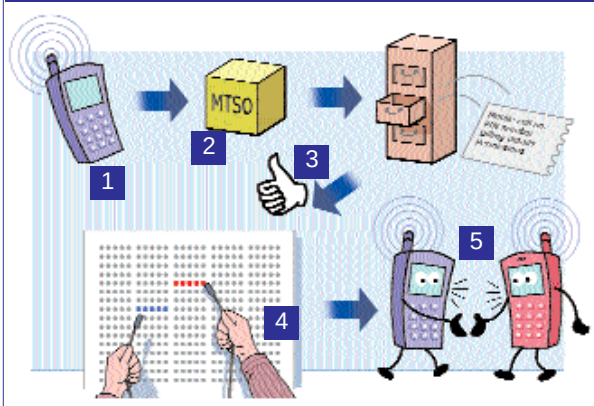
INFOGRAPHICS: Mahesh Benkar

Anatomy of an Incoming Call



1 *The incoming signal reaches the MTSO…*
2 *The MTSO checks with the HLR for the current location of the phone…*
3 *It then sends off messages all over the control channels in the area…*
4 *The phone receives them, and if it is ready to take the call, rings and alerts the user; Else it doesn't accept the call*
5 *If the phone can take the call, the connection is set and the conversation begins*

Anatomy of an Outgoing Call



1 *The phone messages the MTSO with its own number and the target phone number*
2 *The MTSO does a validation check with the HLR*
3 *As soon as it gets the OK signal*
4 *The Switch routes the call and sets the connection*
5 *And the conversation begins*

phone number, the serial number of the unit and the target telephone number. The BTS forwards this data to the MTSO. The MTSO in turn, validates the request and makes a physical connection through the switching network, and instructs the BTS and the mobile phone user to move over to an unused voice channel, to allow the conversation to begin. Often the request may be made to the PSTN, to make a connection to a number within the PSTN. Since these events typically occur within a few seconds, they are not noticeable to the user.

Once a call is in progress, the MTSO governing the call adjusts the transmitted power of the phone through the BTS and changes the channel of the mobile phone and the BTS in an effort to maintain call quality as the user moves within the range of each BTS. Since the user is mobile, the user may tend to weave in and out of the range of a BTS—when that happens, a sophisticated switching technique known as a handoff enables the call to proceed as the user moves to the range of another BTS and is handed-off into another unused voice channel. This ensures smooth and uninterrupted service for the user.

It's not all Hunky-Dory

In a country of 1 billion potential consumers, the carrier war appears to have just begun. The bone of contention here is the so-called hybrid WLL services that are now being rolled out by Reliance Infocomm and the Tata group. Backed by the CDMA technology, customers will have their cake and can eat it too. With super-low charges being the main attraction to shifting your carrier, the older GSM-based carriers are fighting back crying foul over the charges. The cases have been filed and are being argued out in the courts. What this essentially means for the average Indian is that till the GSM, CDMA, as well as TRAI (the Telecom Regulatory Authority of India), get down to resolving their differences, we are stuck with incompatible or partially compatible services.

To add further fuel to the fire, there appears to be a new technical problem regarding the co-existence of GSM and CDMA. GSM operators point out that CDMA transmissions now affect the quality GSM services. The controversy has arisen because the high-powered CDMA transmitters are beaming out pretty close to the frequencies of GSM services that are comparatively low powered. This results in call drops and poor receptions and not to mention, overheating of GSM mobile phones. The solution appears to be in the usage of frequency filters that prevent such leakage—just another petty squabble or a real problem of incompatibility? Only time will tell.

The fine print

The advantage of CDMA over the other technologies is that there is no specified absolute limit on the number of users on the network. Rather, the system performance very gradually degrades for all the users as the number of users goes up, and improves as the number of users is decreased. Of course, if all the users on the network decide to simultaneously clog up the network, it will tend to go down. Also there is the point of spectral efficiency. CDMA makes maximum efficient use of the available spectrum allotted to it. Moreover, since the message signal is spread over a wide spectrum, the resultant signal is more powerful and offsets the effects of small scale fading. These features translate to longer battery lives and talk time for CDMA users. As with every new technology, CDMA isn't without its own set of problems. Most CDMA services don't use a SIM (Subscriber Identity Module) that is typically used in GSM phone services. Instead the carrier generally programs the phones. This means that if you would want to shift carriers at a later date, it would be upto your carrier to have the phone reprogrammed. Another point here is that the CDMA consumer base is comparatively less than the GSM base. This means that your CDMA service provider today may not yet be able to provide you the kind of roaming services that we take for granted in GSM networks—but then again, with some of the biggest names in the industry pushing for CDMA in India, it may soon be possible, at least within India. This is not due to any technical limitation of CDMA—it's all about the geo-technical politics of the mobile world. Overall, CDMA technologies are easier to implement and maintain. Additionally, one rather controversial point is that the running costs of CDMA are lower than than those of competing technologies. And as far as the consumer goes, CDMA in its current form is relatively future-proofed.

info There are 800 million GSM service users and 150 million CDMA service users globally

CDMA and 3G

Virtually all of today's mobile networks use the second generation, 2G technologies, or better. Although it sounds rather exciting, this is nowhere near what is being promised in the future. Later in this decade, we could be drowning in world of incredible multimedia content. The idea is that as most mobile communication networks move beyond to the promised manna of 3G, they will unveil services that could be the literal equivalent of having broadband on your handheld. Look forward to seeing full-blown colour videos, crisp polyphonic audio and live videophony. It's already happening-look at Japan's NTT-DoCoMo, and South Korea. With the step up from CDMAOne to CDMA2000 1x already happening in places around the world, we could soon be seeing data speeds of up to 307 Kbps—and if we look just one step beyond, at the second phase of 3G, with technologies such as CDMA2000 1xEV DO (Evolution, Data Only), we could be looking at speeds of up to 2.4 Mbps!

What would this bunch of airborne goodies get us? If all the carriers had their way, with 3G, every country on the planet would turn out to be like South Korea—all of us would be experiencing broadband Web access on our mobile devices, not on our desktops. The mobile phone isn't just a phone anymore; it is evolving into an entertainment centre. With 3G, the carriers are hoping that we will be playing multi-player games, querying Google, sending and receiving e-mail, and sending off full-colour, full-audio videos to just about everyone all over the planet!

It may well be possible. Remember that within five years of commercial deployment of CDMA services, the first 3G networks had appeared. The entrance of WLL and CDMA services in this country could well be the precursor to putting India online.

SRINIVASAN RAMAKRISHNAN

More than Words

IMAGING: Solomon Lewis



We show you the means to best use two of the funkiest gadgets in town, the Nokia 7650 and the Sony Ericsson P800. Send and receive mails, take photographs, use them as personal assistants and of course, make the essential phone call or two. A how-to on two 'how-cools'

Nokia 7650

Managing a thousand words

Clicking on the Camera folder activates the camera. It can take images in three formats: Standard, Portrait and Night. You can change the camera settings by clicking ***Select > Settings***. Here you can change the resolution, thus the quality, of the images that the camera shoots, and also set the default name of the image shot. Keep in mind that high image quality costs more in terms of storage space.



Changing the image quality of the camera

Snaps taken by the camera are stored in the Images folder. You can manipulate, send, upload and move images from within this folder. Highlighting an image and then clicking on Select is the way to these options. You can send a particular image via an MMS message, via Bluetooth and via Infrared. To delete or move images en masse, you first need to mark them up. Do this using the Select button. Once a bunch of images are marked, you can do the needful.



Sending an image to another location



Defining a server to upload images

You can also upload your favourite snaps to a Web site and you can conveniently share pictures with friends and family. Define an image server by clicking on an image, choose ***Select > Image upload > Upload***. Click on Yes in the next dialog box, this will take you to the Image Server screen. Here you have to input the name of your server, the connection through which the 7650 will contact the server (Access point in use), the URL of the server and personal settings. Once done, you can connect and upload pictures to the Web site.

Creating MMS messages

There is more fun to be had with the pictures taken. MMS or Multimedia Messaging Service, lets you send and receive snaps, music, text and video all rolled into one bundle. Of course, you need the service provider to be a willing accomplice. To create an MMS in the 7650, head inside the Messaging folder. Click on New message and then on Multimedia message. In the window that pops up, type in the number of the recipient. You can add a picture with the message by clicking on ***Insert > Picture***, type in the accompanying text, click the Select button and choose Send.



Creating MMS messages



Choosing a template for an SMS message

Regular, text-only SMS messages are also sent similarly. At the New message option pop-up, choose Short message. Type in the phone number and the text message. Note that you can insert predefined templates here.

Task master

You can set reminders in the form of to-do lists and calendaring notes within the 7650. Head to the To-do folder, click on the Select button and choose New to-do note. Here you can enter the subject of the reminder, the due date and the priority of the task that is to be done. The tasks can be tagged or deleted.



Sending a task via SMS or other means

Similarly the Calendar lets you set reminders and appointments. Click on the Calendar folder, pick a date and then click ***Select > New entry > Memo***. Enter the subject, and other details to finish the memo. You can also send this entry to another person via SMS, e-mail, Bluetooth and Infrared.

Contacts, done right

Contacts are very important, and managing information on them even more so. The 7650 lets you play with contacts in many interesting ways. Enter the Contacts folder, and let the fun begin. You can quickly search a contact by keying in the letters that form his or her name—this appears in the text box next to the magnifying glass icon. Editing, calling, sending a contact a message is all done via the Options menu. You can also receive a contact or a business card via Infrared, Bluetooth, etc.



Sending a contact to another phone or PC

You can define a group and add any selected contacts to it. A group allows you to send common messages (SMS, e-mail, etc), exchange files, notes, etc. Select the Group tab on the upper right corner (the icon denotes three persons). Via the Option menu, choose New group and give it a name. Click on ***Select > Add members***. Choose the contacts that you wish to assign to this group. You can also rename a group and find out the group that a particular contact belongs to.



Creating a group from contacts

Configuring the phone

The two shortcut keys that flank the joystick on the face of the 7650 can be programmed. Head to the ***Tools > Phone > Standby mode*** and customise as required. For example, you can assign the left selection key to bring up the camera and the right selection key to bring up your Inbox.





Configuring a phone profile

The 7650 has pre-built behaviour profiles for different scenarios. It can, for instance, be asked to silently vibrate during meetings using a Meeting profile, wherein even the beeps when keys are pressed can be suppressed, so as to cause minimal disturbance and annoyance. You can activate and personalise these presets from within the Profiles section of the Connectivity folder.

The 7650 can act as a modem and can communicate with other Bluetooth devices, and transfer data using Infrared. All of this is found under the Connectivity folder. Note that the Infrared port must be manually activated before transmitting or receiving data, to keep battery consumption at the minimum. To configure Bluetooth capability, click on the Bluetooth icon and change the options. You can also pair up the 7650 with another Bluetooth device, be it a PDA or a PC. This pairing involves an exchange of passwords, and forms what are known as trusted devices. Only trusted devices can communicate using Bluetooth.



Configuring luetooth connectivity

The 7650 has some pretty useful tricks up its sleeve when it comes to managing calls. Speed dialling is par for the course, but other tricks involve the ability to answer a call by pressing any key on the unit, the option of using more than one phone line, call barring and call divert. Enter the Tools folder, click on Settings, and choose the Call settings tab. Here Turn on Speed dialling.



You can divert calls to another line from here

You can turn on Anykey answer and choose which phone line to use, amongst other things. By activating Call divert—a call can be diverted to either a voice mailbox, or to another landline or cell phone number. Finally you can decide to divert a call either when your phone is busy or if you haven't answered the incoming call. You can also divert all calls, effectively using your phone as a pager.



TIP **These cell phones come with tools bundled within CDs. Look within them to find synchronisation tools and drivers, the latter specifically if you wish to use the phones as a modem to your handheld, laptop or PC**

Back to Speed dialling. Now that we have turned on this feature, head again to the Tools folder and click on the Speed dial tool. The numeric pad simulated here can be assigned 9 quick dial numbers, click ***Select > Assign*** then select a contact to associate with a number. That's it, pressing the assigned number on the numeric key will now speed dial your contact.

Surfing the Internet

Connecting to the Internet using a GPRS service could not be simpler on this phone. Once you sign up for the relevant service from your provider, the latter will SMS you a configuration script. You need to simply run this script and your phone will be all set to surf the Net. You can specify browser settings such as font size and cookies under ***Tools > Settings***, you also need to specify the Default access point here. Also note that Bookmarks and cached pages are to be found inside the Services folder.



You can allow or deny Web cookies

Creating e-mails

E-mails can be sent and received using the 7650. To get started, click on ***Messaging > New message > E-mail***. You will need to create a mailbox. Give it a name, a default connection to use (access point, set it to your service provider), Mailbox type (POP3, IMAP4) and of course, choose security settings such as user name and password. This should create the box and you are all set to mail bomb your world, on the move.



Creating and sending e-mail messages

The rest is pretty straight forward if you have ever worked with a mail client before—the recipient address goes in the To field, and so on. You can also attach files—text, sound, pictures and multimedia at will.

Sony Ericsson P800

Snap it; manage it

Go to the Applications tab, open the CommuniCam application and head for the Preferences. As you can see, the Brightness, the Contrast and the Lighting settings for the camera can be changed from here. For example, click on the cloud icon if you are snapping under overcast conditions. Once happy with these settings, click on Done to head to the Ready screen, where you can take pictures. Note that the camera of the P800 has a timer option—a delay of 15 seconds-which you can use to take group photos with or snap a self-portrait.



Configuring the camera for lighting conditions

Snaps taken are stored in the Pictures folder, here you can manage, view and send your snaps. You can send a picture through Bluetooth, Infrared, e-mail and as an MMS. You can also copy a picture to an external Multimedia Card (MMC).

Multimedia messages

You can send an MMS message from within the Pictures folder. Select a picture and click on ***Send as > MMS***. There are three tabs on the bottom of the picture, which let you add contact details and attachments. Head to the centre tab for contact information, subject of the message, its priority, etc. An attachment in the form of a document, an audio file, a video clip can all constitute the MMS message. Once you are done forming the message, click on the Send button and select the appropriate option from the send or save dialog box.

To view a received MMS message, go to the Messages folder under the Applications tab. From the drop down box of the right-hand, upper corner choose Inbox and click on the received message. You can now read the message text and view the attachments by clicking on the second tab just below the message.



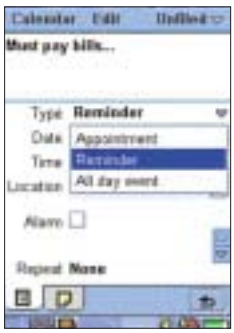
Creating a MMS message

Similarly, you can also type in SMS messages; we suggest calling the on-screen keyboard to do this.

info **You can remove the physical flip completely and work with a virtual, on-screen one by clicking on Control panel > Flip removed under the Device tab**

To-do or not to-do

Turn to the calendar for managing your time and schedules. Find it under Applications and Click on ***Calendar > New***. P800's calendar gives you daily, weekly, and monthly views, for better time management. For our purposes, we will stick to the daily view. Click on ***Calendar > New***, choose the type of to-do task, specify the time limit or location, if any, you can also tag an alarm to the task—the alarm can precede the event by a defined time and you can choose the file to play when the alarm is set to go off. You can either input the text for the task via the stylus or use the on-screen keyboard to do so.



To-do notes can have an aural reminder alongside

Staying in touch

Managing contacts with the P800 is a breeze. Contacts can either be stored on the phone's memory or on the SIM card. Furthermore, you can manage contacts within folders—such as Business or Personal—and all contacts are filed alphabetically.

Finding a contact is even easier with ***Contacts > Find tool***. Also in this menu you will find means to send a contact to another folder, to send it as a business card or to view a received card. Contacts can be sent via Bluetooth, SMS, Infra red, e-mail or as MMS.

You can also choose to personalise your contacts—the personal information can be edited, special ringtone can be associated, as can a picture, and so on. Click on ***Contacts > Edit*** to perform these tasks. To assign a unique ring to a contact, click on the Ring Tone drop down menu, set an associated image, click on the third tab where you can add, remove or change the picture.

info **The P800 has a proprietary slot that can take 16 MB external storage cards (MMC). This is in addition to the 14 MB free memory that the phone comes with**

Configuring the phone

The P800 is extensively configurable and most of its settings can be changed in the Control Panel tab. For instance, the shortcuts visible when the flip cover is closed can be changed from here. If you have an external MMC storage disk, you can format it from the Control Panel. You can change the wallpaper that the phone displays during boot-up, the welcome message, assign a screensaver and most importantly, power saving settings from within ***Control Panel > Display***. Make sure that Power Save is active and set at a low enough time period, and that Light is set to Auto (this is the screen backlighting).



Contacts are alphabetically arranged

The P800 can act as a modem; it can communicate with other Bluetooth devices and can transfer data using Infrared. All of this is found under the ***Control Panel > Connections*** tab. The Infrared port must be manually activated before data exchange to save on battery consumption. To configure Bluetooth capability, click on the Bluetooth icon and change the options, making sure that the operation mode is set to Auto. You can also pair



The power settings can be configured from here

up the phone with another Bluetooth device—be it a PDA or a PC. This pairing involves an exchange of passwords, and forms what are known as trusted devices. Only trusted devices can communicate via Bluetooth.

info **Each application has a menu hot spot on the upper left corner of the screen. This drop-down menu offers access to options and allows you to change application settings**

Web surfing

The Web browser can be activated from within the Applications tab (it is called Internet). Here you can open a Web page, add a bookmark, or change browser preferences.

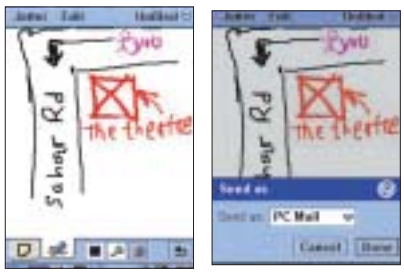


Your phone can automatically fetch an IP address

Connecting to the Internet is simply a matter of running a configuration script that your service provider will SMS to you when you sign up. To change or view details of your Net setup, head to the Control Panel and click on Internet Accounts. Here, you can add or remove accounts or edit information pertaining to accounts present on your phone. Click on the Edit button to do so, this will bring up a Settings window. Your username and password will go in the Server tab of the Settings window, IP address can be auto-fetched or manually set in the Log-in tab (depending upon the service provider), and if you need to use a proxy server, it goes into the Proxy tab.

Jotting it down

The Jotter is a fun utility that can be surprisingly useful. For the artistically inclined it can be used as a rough scribble pad to note down musings or to sketch muses. For the rest of us it can be a handy-dandy utility to bring direction to the lost sheep. It is found under the Applications tab. There are icons lining the bottom of the screen, the first one looks like an earmarked note—you can type stuff here, or use the stylus to write a note as text. The second icon, that of a scribbling pencil is where the real fun lies—you can also change the font and point size of text typed as well as the brush size and the colour used.

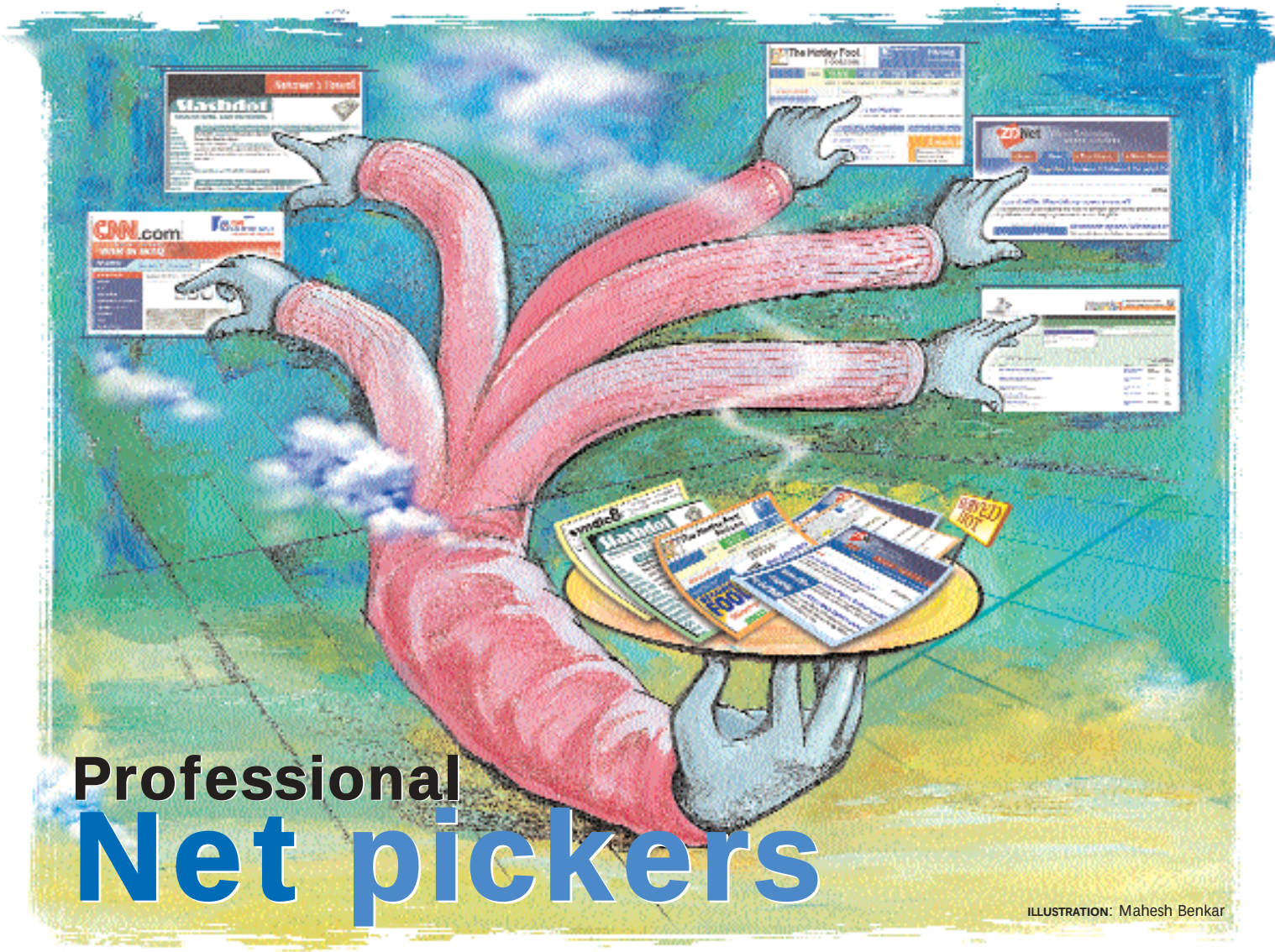


You can use the Jotter to send scribbles and drawings to others

Access the Jotter menu to uncover that you can send what you scribble in Jotter to others. Wouldn't it be great if you could mail your friend visual directions to the theatre where the movie is showing this evening? You can do just that. Scribble, scribble, scribble (you can also erase what you don't like, click on the third icon). Once satisfied with your skills, head to the Jotter menu and send the note as a PC Mail or an MMS!

AHMED SHAIKH





Professional Net pickers

ILLUSTRATION: Mahesh Benkar

The Internet connects you to information, but can you use it to bring information to you? Here's how to get relevant news and information delivered to your desktop

The amount of information that's available on the Net is staggering. The most common way of sifting through it all is to use search engines such as Google or Lycos, and browse through the results to find the most relevant links. When you find pages that you would like to visit again or keep track of, you can bookmark them by adding them to your Favourites. Now, this involves a lot of work, as sometimes the Favourites list can contain more than a hundred different Web sites. Getting the latest from all these sites, involves a lot of patience, as graphics and large sized pages take some time to load. Often you have to wait for entire pages to load and search through immense amounts of uninteresting text to find what you need.

Now, imagine a technology that helps you obtain updated information, on any subject of your choice, without any effort on your part-except for a double-click here or a right-click there. Sounds interesting, doesn't it? This kind of a tool called aggregation or syndication that gathers the latest information to bring it to you has been around for some time now.

Amphetadesk v0.93.1, Syndirella 0.9b and Microsoft .NET Framework v1.1.
Find it on the Mindware CD

What is aggregation?

Aggregation or syndication is a simple concept, where data in an XML (eXtensible Markup Language) format document standard called RSS (Rich Site Summary), is collated and displayed. RSS is widely available today and enables the sharing of resources and news, easily and quickly.

Web sites such as Google news and Yahoo! News, use their own aggregators to crawl the Web and mine the latest news from around the world. While these news sites are very reliable, you wouldn't find anything here that a regular Web search couldn't yield—and you will still have to do a lot of sifting to get to the most relevant bits. In addition, you will have to scan through pages upon pages of headlines—a list of practically everything that has happened around the world—to find the things that are of interest to you.

Of course, not all of us are general news buffs. Some of us prefer to get the



Google News offers news from 4,500 sources

latest happenings in the Linux community, the latest trends in fashion or just read messages from user groups—tastes vary, and one person's pleasure is another's poison. Here's where a desktop aggregator comes in to save us from the cacophony of garbled information that the Internet is. A desktop aggregator sets you free by controlling your dosage of information to exactly what you want and need.

Whatever your poison; chances are there is someone out there publishing it in XML format or running a blog on it. Even if there isn't, you can build your own site, and with a few lines of code, syndicate information from other sites for your areas of interest on to your Web page.

How does it work for me?

Personalising your syndication requirements is easy with software such as AmphetaDesk, Beaver and Syndirella that deliver news to you from popular news sites, or other sites you choose to subscribe to. These software, known as news aggregators, can deliver a plethora of the latest news from all around the world to your desktop, keeping you as informed as a news anchor for the BBC. What type of information, and how much information you get is limited only by your imagination, your Internet connection speed and the capacity of your hard drive.

How to?

First things first: You need to choose the type of aggregator that you are comfortable with. There are two basic types—Web page type and the three-pane type aggregators. They are named according to the way they display the news, after they update and collate the data that you have opted to subscribe to. This is the only noticeable difference between the two types, and mail client users will probably feel more comfortable with the Three pane type.

For those who have never used aggregators before, the toughest part is learning about subscriptions. In order to receive news updates on your choice of subjects, you have to find the appropriate XML links. Most sites that provide content in XML or RSS format, advertise the fact with little orange XML Buttons. If you copy the link associated with this button, and subscribe using your aggregator, you will receive the latest updates from that site. You might face some slight problems initially when trying to find these links, or while subscribing to them, but a few trial runs later, you will be well-versed in the nuances of blog searching.

Most aggregators have a default list of general news links—ranging from world news and sports, to the latest on the XML front and developer news. They also offer links to various Web sites such as popular blogs. Look through the list that is displayed on your aggregator's Web site and chances are you will find what you are looking for right there instead of searching for it on the Net. However, if you still want to search for content, you should look out for XML buttons on the sites you visit.

Once you've zeroed in on the stuff you want to keep track of, all you have to do is subscribe to it via any Web page display aggregator such as AmphetaDesk. Just run the installer, extract to a folder location on your hard disk, double-click on the .exe file and wait for it to update itself. When AmphetaDesk is updated, it will open a locally hosted Web page, with the latest versions of the default subscriptions. Now you are free to mould the Web page as per your preferences, and add or delete subscriptions. To add subscriptions, click on Add a Channel and choose from the list of the thousands of popular feeds that are displayed alphabetically, or add a link to a known Web address.

Once you have decided on your choice of subscriptions, click on My Settings and personalise the way AmphetaDesk works. Changing the refresh rate to the minimum—once an hour is probably wise for those who want fast updates and near real-time information. Once you have checked all the settings and subscribed to your choice of links, just sit back and relax, and watch the information flow into your lap.



AmphetaDesk's Web page display style

Three-pane display aggregators such as Syndirella, run on Microsoft's .NET platform. Hence, if you don't have .NET installed, you can download the 20 MB file from *www.microsoft.com* or by using Windows Update. Most software have

Aggregators Ahoy!

Some aggregators are Web-based, or can send news feeds and updates via e-mail. Others are Web page display or three-pane display types.

Some other popular aggregators are:

Peerkat: A Web page display type aggregator, that can be found at *http://www.oreillynet.com/~rael/lang/python/peerkat/*

Beaver: A popular three-pane display aggregator, which can be download at *http://www31.brinkster.com/toolmaker/beaver.htm*

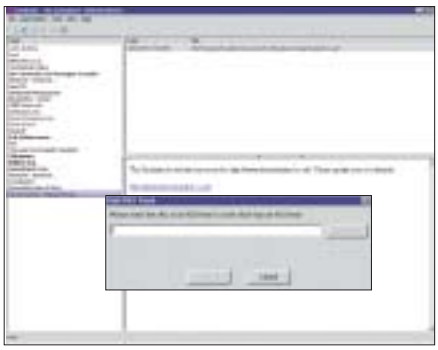
FeedReader: Another three-pane display type of aggregator, which can be downloaded from *www.feedreader.com*

News Is Free is a Web-based aggregator, that allows you to build a personal Web page with feeds of your choice. ww.newsisfree.com

Rss2email: A tool for Linux users that can send news and updates from the feeds you chose, to your e-mail account. However, this is a script that has to be run on a Unix based server that has 24/7 connectivity—get it at *http://www.w3.org/2002/09/rss2email/*



The AmphetaDesk My Settings page



Subscribing via Syndirella

their own feeds set as default. As in any Web page display aggregator, to add more links, you will have to find news that interests you on the Internet. Copy the XML links and paste them in the Add RSS feed popup and click Download. The software then checks the validity of the link, and downloads the initial feed to display it. The advantage of this type of aggregator is that it looks and feels very similar to Outlook—a convenience for most users. Another advantage is that feeds can be kept for later referral. The individual feed settings include a customisable refresh time and also an automatic expiry or deletion of feeds after a user-specified time period.

Where to look

In order to receive updates and interesting articles, you have to first locate Web sites from where you can subscribe to news feeds. Syndic8 (*www.syndic8.com*) is one such site that hosts links to a variety of news and information, as well as links to popular blogs. Using Syndic8, you can search for topics, blogs and news agencies that offer you something of interest. Another such site is Meerkat at *http://www.oreillynet.com/meerkat/*, which allows you to scan through the news updates and blogs that were posted within the last hour. You can also conduct a regular search to find interesting information. NewsIsFree.com (*www.newsisfree.com*) allows you to build your own Web pages, within which you can include your choice of updates and newsfeeds. myRSS at *www.myRSS.com*, also allows the creation of personal channels, where a user can select the type of feeds that appear on his or her channel. A highly comprehensive site called Moreover.com (*http://w.moreover.com/main_site/solutions/pub_feeds.html*) offers headlines from over 2,500 publications across the globe.

Jargon Buster

Mark-up language: A mark-up language is a coding system that is used to describe, structure and link documents. It is mainly used for structuring Web-based documents.

XML: XML, or eXtensible Mark-up Language, is a meta-language—language used to describe another language—that is used to create a standardised mark-up language. This is used to create highly structured documents for distribution over the Web. With XML, documents can have useful data and descriptions embedded in them, as all content is classified and tagged uniquely, thus allowing Web browsers or XML readers to easily recognise the document structure.

RSS: RSS, short for Rich Site Summary is an application of XML, which reads and separates data from an XML document. RSS was originally developed for Netscape's My Netscape Network (MNN), and is used by aggregators to selectively choose content from Web pages, based on changes or updates. RSS is widely used by BBC, CNN, CNET, ZDNet, Slashdot, Motley Fool, Disney, Forbes and many more to share news and information.

Blog: A blog is a Web-based personal log, which is regularly updated with new information on the author's choice of subjects. The term Weblogging or blogging was coined in 1997 by Jorn Barger, who maintains a very popular blog at *www.robotwisdom.com.*

Where to use

With aggregator software, basic news is just the beginning. The true potential of user groups, Web forums or e-mail forums can be realised with aggregators. If you are part of a forum or user group, you will understand how frustrating it can be to keep visiting a site to check for updates on a message board, especially whilst waiting for a reply to a comment you made. With aggregators, as soon as a reply is posted, you are notified—you don't have refresh pages or check your inbox for alerts. All this obviously depends on whether the forum is based on XML or not, as the aggregator has to be able to understand the updates.

Also, while using aggregators, you don't need to wait for tiresome graphic-intensive Web pages to load. The aggregators run in the background and refresh automatically, thus saving time to leave you free to attend to other business. In a world where time is money, every second saved is a penny earned, and aggregators will do just that for you.

Being the Net junkies we are, we will never give up using the Web, and its billions of pages, to search for the proverbial needle-in-a-haystack. In no way will aggregation replace browsing or surfing the net, but it certainly makes for a more efficient way of keeping up with information from our favourite and most frequented sites.

ROBERT SOVEREIGN-SMITH



30Minutes Expert

PC goes to Boot camp

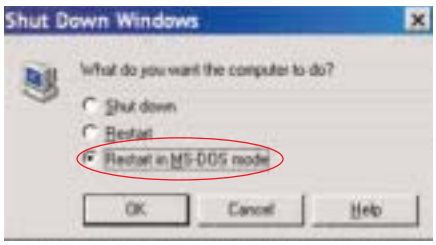
The eXtended Operating System Loader (XOSL, available at ***www.xosl.org***) is a boot manager that you can use to select between multiple OSes and other boot devices during system start-up. It is completely free to use, has an easy to use, graphical interface and can boot into practically any OS on the planet. Although there are other tools associated with it such as the Ranish Partition Manager and SBM, the Smart Boot Manager, this article will show you how to setup and best use XOSL.

Remember to keep a bootable floppy or a bootable CDROM handy. In case things mess up after you install XOSL, and you cannot boot into your OS, boot into a DOS prompt and type FDISK /MBR.

XOSL can either sit on its own partition or on the Master Boot Record (MBR) of your hard disk. If you wish to give it its own partition, ensure that you tag it as an active one. We will give it the MBR, since it is the simpler of the two options. We will also assume that you have Windows 98 as the primary OS, with Windows 2000 or XP forming the second OS. Note that you can also boot into a Linux distribution using XOSL. Right then, lets get our hands dirty.

Installation: Extract the ZIP file found on the Mindware CD on to a temporary directory. The package consists of two directories: Manual and XOSL. You can take it two ways from here: either copy the contents of the XOSL directory onto a bootable floppy; or reboot into MSDOS mode and take it from there. We will take the second option, so restart the PC in MSDOS mode and head for the XOSL directory.

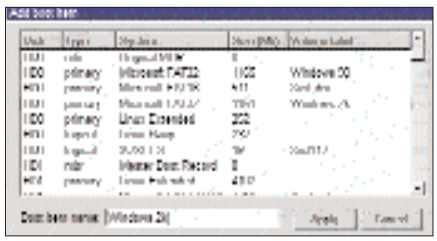
Note that, in case your primary OS is Windows 2000 or XP, you should go the bootable floppy route, install from there and keep the floppy in a safe place for future use.



Restart in MSDOS mode to install XOSL

Setting it up: Type '***install'*** at the command line to start the process up. XOSL will analyse your system for the partitions available, your mouse type and the maximum resolution that your monitor can support. Click on the first option (Install on a DOS drive), note that you can change the Video mode and the drive you wish to install to, amongst other things. Make sure that there is a Yes for the Ranish partition manager and the SMB. Choose Start installation, press ***[Enter]***, press ***[Y]*** and when it asks to install SBM, press ***[Enter]***. Press any key to install XOSL onto your system, press the Reboot button.

POST it: After the POST, XOSL will throw an initial screen at you. This is where you configure it to boot your OSes. Click on the Setup button to do this, then hit the Add button to bring up a menu of partitions that reside on your hard disk(s). Since we are multi-booting a Windows 98 and a Windows 2000 partition, we will make the selections as seen in the screenshot. Note that HD0 is your first hard drive, HD1 the second, and so on. Give appropriate names to your boot partitions and click on Apply. This will create two boot items.



Choose the partition that you wish to boot from, here we select Windows 2000 and 98 OSes located on the first hard disk, HD0

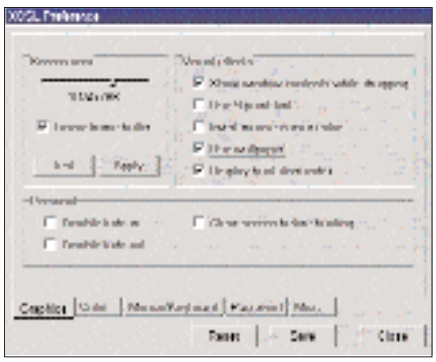
Choose the partition that you wish to boot from, here we select the Windows 2000 and the Windows 98 OSes located on the first hard disk—HD0.

The Ranish Partition Manager can be called from the XOSL screen by pressing ***[Ctrl]+[P]***. Proceed with extreme caution.

XOSL
Find it on the Mindware CD

Make sure you have backed up your data before you use Ranish.

Did you know: XOSL is very configurable. You can assign a password to a boot item for greater security by clicking on the Password tab. You can also assign each boot item a Boot key from within the Keys tab. Click on the Save button, then on Close. This will take you to the main window. Here you can click on Preference to change the resolution, to give Visual effects (such as adding a wallpaper to the boot menu), changing the UI colours, assigning shortcut keys, etc. Change the options as you see fit, click on Save and then on Close. Select the OS of choice, and then click on Boot to start the operating system. That's it, you are done!



The Graphics tab lets you change the resolution or wallpaper amongst other things

The Graphics tab allows you to change the resolution or use wallpaper amongst other things. To password protect your boot-up, head for the Password tab, shortcut keys to common tasks can be found and changed from the Misc tab

The manual directory where you unzipped XOSL contains additional help and guidelines to get the best from XOSL. We recommend reading the contents of the CD ROM and the install sub-directories in particular.

AHMED SHAIKH



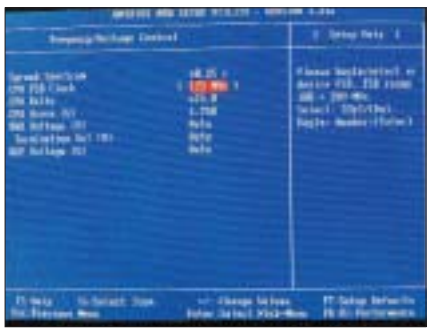
Get your vaccinations here for bogus clock speeds, dirty fans, BIOS flashing, Linux problems, dual OS installations and much more...

Under clocked processor

Q. I have an AMD Athlon 2000+ processor on a MSI motherboard, with 256 MB RAM and a 40 GB hard disk. The OS on my machine is Windows XP. While booting, the machine shows the processor speed as 1.25 GHz instead 1.65 GHz. What is the problem?

Ajit Wakode

A. As your processor is working at a lower frequency then normal, you need to check the settings in your BIOS. On POST press [Del] to enter the BIOS. Go to Frequency/Voltage Control. Here you need to check two values—CPU FSB Clock and CPU Ratio. Since the AMD Athlon processor series work on 133 MHz, the CPU FSB clock should be set to the same. The Ratio value should be set to Auto. If the CPU FSB Clock is not at 133 MHz, arrange the jumpers as per the motherboard manual to set the frequency to 133 MHz. Go back to BIOS and ensure that the CPU FSB clock is set at 133 MHz. Restart your machine and check the frequency at which your processor is working.



The Frequency and Voltage control inside the BIOS

Cross your BIOS limitation

Q. I have a Pentium III 450 MHz processor on a 440ZX motherboard, with 256 MB RAM and Windows XP Professional as the operating system. Recently, I upgraded to a 40 GB hard disk, but the system detects the hard disk as a 27.27 GB. What is the problem?

Sreedharan

A. Most old motherboards have a limitation for the largest capacity of hard drive that they can detect. You have a motherboard that does not support a 40 GB hard disk, thus resulting in the improper detection. You should visit your motherboard manufacturers Web site, and download the latest BIOS update. A word of caution: If the update process is interrupted while updating your BIOS, your motherboard may be rendered useless.

Visual ache

Q. I run Windows Me and have Microsoft Visual Studio 6 installed. I have developed a small application in Visual Basic, but am unable to execute it. I get an error message saying, "Cannot find DAO350.DLL". How should I tackle this problem?

Navin



Setup options while installing Visual Studio

A. While installing Visual studio, you may have unselected Data Objects. Reinstall Visual Studio using the 'typical' option or select Add/remove in the existing installation and install Data Objects. You will be able to execute your application now.

Days of Cobol

Q. I wish to convert the existing data from RM Cobol to any other database or text format. I have the data files but I can't make out the file structure. How do I convert it?

Uday Shetty

A. One way to convert your data to a text file or a .csv file, is to write a small program in COBOL that reads the database file and writes it to a line sequential file. One constraint in this approach is that you must know the record layout. You can find the record layout from

the COBOL source (.cob) files.

Search for a file named recover2.cob. When you execute this file (type ***runcobol recover2.cob*** and press ***[Enter]***), it will dump the contents of an index file to a binary sequential file. The new file will be more understandable and you will be able to extract the data easily.

If you still can't get the data on your own, you can also convert your data, at a price. Data readers and converters automate the task of converting data to any other database format.

One such software is available at ***http://www.siber.org/sct/datafile/data-viewer.html.***

Clearing the MBR

Q I have a Pentium III 650 MHz with a dual boot system, running both Windows XP and Linux. Recently I manually deleted both the partitions of Linux—swap and ext3—but still get the initial dual boot screen. How can I remove this?
Amit Aggarwal

A The solution to your problem is to go to MSDOS prompt and type ***C:\>fdisk/mbr***. This will get rid of the initial dual boot screen.

Faster than the watch

Q My problem is that I can't change the time and date in my machine. I have even changed the CMOS battery, but still the problem remains. I observed that the second counter was moving fast, as if it were the microsecond counter. Is the problem with my BIOS?
Gopi V



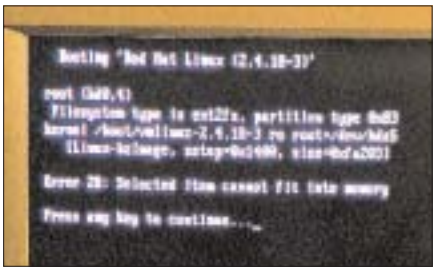
ILLUSTRATIONS: Mahesh benkar

A If you have not tried changing the date or time through MSDOS then do so. Sometimes, Windows causes the problem leading to a belief that the CMOS clock is not working.

If your observation about the second counter is true, then the RTC (Real Time Clock) in your machine is not working normally. A number of applications and games rely on the RTC for time. A faulty RTC can cause these applications to perform abnormally. The only option is to get the RTC chip replaced at one of the service centres.

World of Linux 9

Q I have an AMD Athlon XP 2000+ processor on an ASUS A7N266-VM motherboard, with 128 MB RAM, 40 GB hard disk and onboard graphics (GeForce2 MX). I have GRUB as the boot loader.
When I try to install Red Hat Linux 8.0 on my system, I get the following warning message while creating a new partition: "Warning: Boot partition/may not meet



Use GRUB to partition your Linux machine



*see on page 98-99

booting constraints for your architecture. Creation of a boot disk is highly encouraged." Below the warning message there are two options, the first is 'Modify Partition', while the second is 'Add anyway'. When I select 'Add anyway', the setup continues and the installation is successful. But when I reboot my system and boot into Red Hat Linux, I get the following error message, "Error 28: Selected item cannot fit into memory. Press any key to continue..." When I press a key, the boot menu shows up again. What do i do?
Sanju B Nelli

A It seems that you have created a swap partition that is equal to the size of the memory you have in your computer (i.e. 128 MB). You will have to create a new 256 MB swap partition.

To do this, restart your machine and boot via the Red Hat installation disk 1, now select Linux rescue, and login as root. Start the GRUB utility by typing ***grub*** at the command prompt.

Once within GRUB, type ***root (hd0,0)*** and press ***[Enter]***. Check the file system and partition type values—they should have ext2fs and 0x83 values respectively. If not then issue a ***root (hd0,1)*** command and check again. Repeat the exercise till you find the correct partition.

Once you have found the correct partition type ***setup (hd0)***. This will install the boot loader in the MBR of the hard disk. Now exit GRUB and restart your computer. You should not get the problem again, if you still face the problem, then it would be a good idea to use LILO as the boot loader and try again.

Bad client service from Windows NT

Q During the Startup of my PC, I get an error saying, "Windows Networking: Unable to load the dynamic link library msnp32.dll, the system cannot find the file specified. Some or all, of the following feature is not available: Microsoft Network". I have tried at my best to resolve this but in vain. I seek your advice to solve this error.
Anand Jha

A This is an error, which relates to a file named 'DSClient.exe' (directory services client) in Windows NT. This file forms a part of the security functionality of Windows NT, and automatically installs other important driver files including secur32.dll, vredir.vxd, vnsetup.vxd and msnp32.dll. To reinstall it from your Windows NT CD-ROM, follow this procedure.

Load the Windows NT CDROM and look for the DSclient.exe file in the CD. Run the application, which will reinstall some other driver files apart from the one you have specified. This will solve your problem.

High speed compatibility problem

Q I have recently upgraded from Windows 98 to Windows XP Professional. I installed *NFS4: High Stakes*. Whenever I try to run the game, i get an error message: "Nfs4 is not a valid Win32 application". Please help me.
Arvind Madan

A Certain applications do not run in Windows XP, because they were not designed for it. You can still execute such applications by right clicking on the application and selecting the Compatibility option. Here you can specify the OS that needs to simulated. As you have upgraded from Windows 98 to XP, you should select Windows 98 in the combo box. Now you won't get the error and will be able to execute the game normally.

If the game still does not run, try reinstalling the software again and/or updating the driver files. You can get the latest drivers from the Web site of the manufacturer. The latest patch version is 4.50, which is available at ***http://www.gamesdomain.com/patches/n/3237.html.***



Changing the compatibility mode for a program under Windows XP

Playing the graphics game

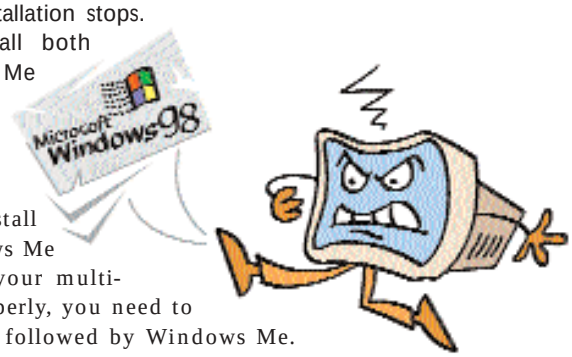
Q I have an assembled computer with Pentium III 667 MHz, inbuilt 4 MB graphics chip and Windows 98 SE loaded. Recently, I purchased a DVD ROM drive, but while watching movies, found that the motion is not smooth. I have been led to believe that I have to purchase a graphics card. Please suggest a card suitable only for watching DVD movies, as I don't require it for gaming purposes. Secondly, will high-end graphic cards, such as Ti4200 or Radeon 9700 pro, improve the quality of the picture.
SK Biswas

A Normally, a DVD movie runs quite smoothly on the configuration you have specified. Ensure that there are no memory or CPU-intensive applications running in the background. At the same time, increasing the memory capacity would be a good option.

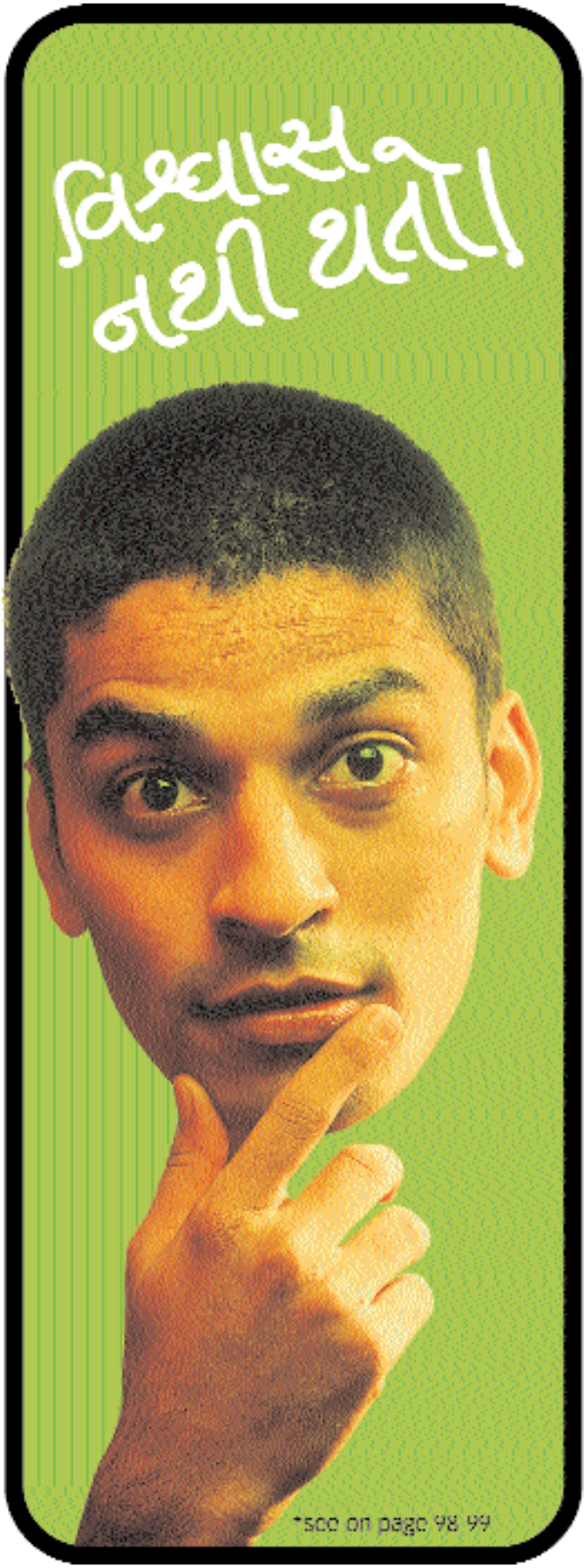
For the second question, a high-end

Putting the cart before the horse

Q I have a Pentium 4 1.6 GHz processor with Windows Me. Whenever I try to install Windows 98 it shows an error message "already has an upgraded version" and after the error message the installation stops. Isn't it possible to install both Windows 98 & Windows Me on different partitions on the same computer?
Partha Bhattacharyya



A Yes, it's possible to install Windows 98 and Windows Me simultaneously. But for your multi-boot system to work properly, you need to install Windows 98 first, followed by Windows Me. Different partitions are not necessary as along as the folder names are different. Install Windows 98 first and then Windows ME and your problem will be solved.



graphics card will definitely boost the video quality in a big way. Since you want one only for movies, a GeForce2 MX 16 MB card is a good choice, as it will offer good value for money. What's more, you will also be able to play demanding games, such as *Quake III* and *Unreal Tournament*, which may change your attitude towards gaming.

Remove that Buzz

Q. I recently bought a Toshiba Satellite laptop with a Pentium 4 1.8 GHz, 256 MB DDR RAM, 30 GB hard drive and an internal modem, running Windows XP. I face with two problems. First, when I use the modem to connect to the Net, it dials the number properly, but makes an extra beep when activated. It occurs at regular intervals of about 3 seconds and the laptop shows the message, "The phone line is busy". I have tried changing the number, the telephone line and also reinstalled the modem driver, but to no avail.

I also want to connect this laptop to my home PC that has a NIC and runs Windows XP. I failed to connect using the NIC and tried the wizard, as well as manual configuration. How can I solve these problems?

Jitesh M K



Setting the phone line for Pulse Dialing

A You might have configured the dialing pattern as 'Tone' in your Dialing Properties. Many telephone connections still do not have the facility for Tone dial. To change the dialing mechanism go to Control Panel > Modems > Dialing Properties. Now change the 'Dial using' to Pulse dial.

To transfer files from your laptop to your PC, you need to connect them via a network. You need to have network cards in both, the laptop and the PC, and connect them with a cross-linked cable. To create a cross cable, connect pin 1 and pin 2 at one end, to pin 3 and pin 6 at the other end, respectively. As you are connecting only two computers, further configuration is not required, just connect the cables and you will be up and running.

Transfer on the move

Q. I have a Mobile with an IrDA port, which I want to connect to my computer. The problem is, my computer doesn't have an IrDA port. Do I need an IrDA port, and what will it cost me? My computer is an IBM Net vista, with four USB ports.

Chaiatny Sharan

A As you do not have an IrDA port on your computer, you need to get an IrDA device. IrDA devices are external devices that connect to the computer via the USB port or even the serial port. These devices are available, but expensive and cost about Rs 5,000. If you are serious about using IrDA, upgrade to one of the latest motherboards, which have the infra-red facility.

Cassettes to MP3

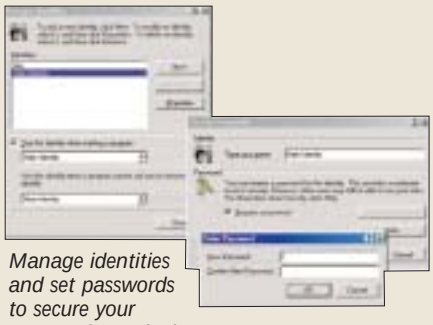
Q. I have many audio cassettes. Is there any way I can convert the songs on them in to the MP3 format and store them on CD's?

Rajat

FAQs

Secure your Outlook Express

Q. I use Outlook Express to manage my Hotmail account. As my computer is also used by others, I want to know if there is any way in which I can password protect or hide my inbox from public view?
Sidhartha Mohapatra



Manage identities and set passwords to secure your account in Outlook

A. Outlook Express does have a facility to manage users, to access it go to ***File > Identities > Manage Identities***. Here, you have two alternatives—you can create a new identity or use the default identity.

If you create a new identity, you will have to set up your Hotmail account again. To secure your identity click on ***Properties > Require a password***. As soon as you click the checkbox a window appears for the new password. Enter your password and your Outlook Express is secure. It is important to remember that instead of the normal exit, you have to click Exit and Log Off Identity in the File menu.

Tired fans

Q. I have assembled my own PC, it consists of a Pentium 4 processor on an original Intel motherboard with 128 MB SD RAM and a 40 GB hard disk. One day the computer just shut down normally, but refused to start up again. It started after an hour, but hung after 10 minutes. On opening the cabinet, I observed that the fans (both the SMPS and the processor fan), were not working properly. They were starting and stopping unpredictably. What is the problem and how do I solve it?
Vijay

A. You have done a good job of troubleshooting. On first thought, dust seems to be the culprit—quite often the fan's ball-bearings jam due to the dust. As a result is that the fan doesn't work properly and causes the machine to function abnormally.

If dust isn't the culprit, get the SMPS checked by a professional engineer. Since both fans are behaving unpredictably, the SMPS might not be able to supply enough power. If a fan doesn't work properly, the temperature in your machine rises, which in turn causes the machine to act up.

Cleaning the fans and fixing the SMPS, will solve your problems.

Hard disk: on/off?

Q. I am running Windows Me and have noticed the option of turning off the hard disk in Power Management. What exactly is the purpose of turning off the hard disk? In what specific cases should the hard disk not be turned off? What happens if the hard disk turns off while an MS Word window is open? Can it cause any harm to the system?
Bharat Bhatnagar

A. The main purpose of power management is to save power. This benefits us in two ways—reduced electricity bills and an increase in life expectancy for peripherals. There would be no data loss, even if the hard disk shuts off automatically. As soon as you use the system the hard disk will pick up from where it left off. One can set the power management to STR (suspend to RAM) from the BIOS. This option causes all the data to be stored in the RAM, and switches off all the peripherals in the system except the RAM and the CPU fan. Power Management does not harm the machine, in fact it reduces the strain on the devices and thereby increases their life.



Convert audio tapes into MP3s using MusicMatch Jukebox

A. To do this, you will have to get a Line-On/Line-Out cable. The cable is connected from the line-out of the audio player to the Line-In port of the soundcard. To record, you should use decent sound recording software, such as SoundForge or MusicMatch Jukebox. Once the songs are on your computer, you can burn them onto a CD. You can also refer to our October 2002 issue, where we conducted a workshop on converting audio cassettes into MP3s. There you will find step-by-step instructions on how to transfer songs from a cassette to a PC.

DirectX misbehaving

Q. I have a P4 1.7 GHz computer, 128 MB DDR RAM running Windows XP. I have a problem running my games. I tried the DirectX diagnostic troubleshooting tool, and found that there is some sort of DirectX error. When I ran the Direct3D test, a message is displayed saying, "You cancelled the test by pressing a key", even though I never touched any key. I installed DirectX 8.1 from one of the earlier Digit CDs, but even that didn't help. I tried to repair Windows XP, which solved the problem, but only for a few days. I have Windows XP and Windows 2000, and the problem persists with both the operating systems. Please help me solve this problem.
Suman

A. Everything depends on the graphics card you have, and the games you wish to play. An on-board graphics card is normally not recommended. As you have a problem with DirectX, you should be trying installing DirectX version 9 instead of DirectX 8. You can download it from ***http://www.microsoft.com/windows/directx/downloads/drx90.asp***.

Send your computing problems to *sos@jasubhai.com* or write to Digit, D-222/2, TTC Industrial Area, MIDC, MIDC, Nerul, Navi Mumbai-400 706, and we may answer it here!

tips & tricks



E-mail is a part of everyday life, whether you are a entrepreneur or a student. Here are a few tools to make your everyday e-mail experience more efficient

ILLUSTRATIONS: Mahesh Benkar

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@fficient-mail

MICROSOFT OUTLOOK

Outlook users can tweak and tune to get what they want, using these tips and add-ins



Bypass read receipts

To skip read receipts you need to know which e-mails request them. To do this, you need to change the look of your Inbox. Select your Inbox and click Field Chooser, in the combo box. Select 'All Mail Fields', and locate the 'Receipt Requested' field. Drag and drop this field to the Inbox window. You will see an additional column with the values 'Yes/Blank'.



Choose to bypass Read Receipts in the Tracking Options

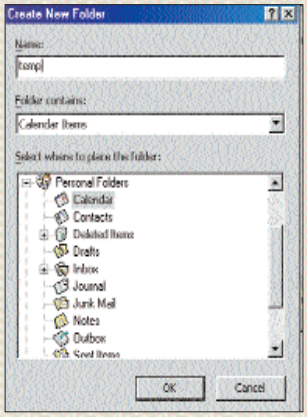
Here 'yes' means a read receipt is requested.

To bypass, you have two alternatives—the first is to click 'No' when such an e-mail opens. You can make Outlook remember your answer for all e-mails that request read receipt.

Another alternative is to go to ***Tools > Options > E-mail Options > Tracking Options***, and select any of the three responses—Always, Never or Ask—that need to occur when e-mails with read receipt arrive.

Printing blank calendars

Sometimes you urgently need a blank calendar for the week/month. Outlook lets you do so. It is as simple as creating a folder and printing it. Just click on the Calendar icon and select New Folder. Key in a name



Print a blank calendar by creating a new folder

for the folder and press OK. Now select the newly created folder and print it in the desired print style.

Move fast

There are some shortcut keys in Outlook, which are very helpful while navigating. Pressing ***[Ctrl] + [Shift] + [I]*** moves you directly to the Inbox folder and similarly ***[Ctrl] + [Shift] + [O]*** moves you to the Outbox folder.

Similarly, if you are working with Calendars and constantly need to switch between the weekly and monthly view, then you can use the keys ***[Alt] + [-]*** and ***[Alt] + [=]*** to do so.

Categorising e-mails

A lot of people do not write subjects to their e-mails. There are ways you can insert the subject, making it easier to categorise and manage e-mails even after receiving them. Just open the e-mail, click on the subject line, modify the subject and save it.

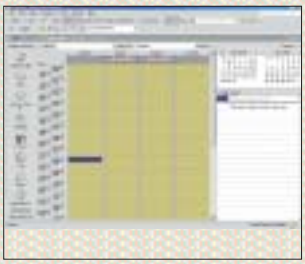
Abbreviated time

If you need to insert the time anywhere in an e-mail, Outlook has some simple shortcuts. For example, to type 5 pm, just type 5p, while 6:45 am can be entered as 645a.

Days at a glance

You can view 1 day, 5 days, 7 days or 31 days at a glance, in the Outlook calender. It is also possible to view 2 to 14 days at a glance—any 14 days irrespective of the month or year.

While in the Calendar



You can choose to view any selected date

view, press ***[Alt] + [0 to 9]***. For example, if you press ***[Alt] + [0]***, you get a view that shows the next 10 days from the current selected day. Say you wish to plan all Sundays of the month, click the first Sunday, press ***[Ctrl]*** and select all the Sundays of the month.

Forward contact(s)

The simplest way to forward contacts is to switch your view to Phone list in Contacts. Select the single or multiple entries that you wish to forward, right-click and select Forward Items. Now, type the

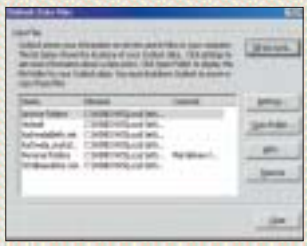
e-mail address of the intended person and press Send.

Manage PST file size

All the e-mails in Microsoft Outlook are saved in a single file with a PST extension. If you have used Outlook for a long time, the size of the .pst file will be large. Keeping the file down to a manageable size is a problem. One way to reduce the file size is to archive the old items. The archived items are then moved to another PST file. But the archive file size will also increase over a period of time.

Another way is to create many data files—one for personal mail, one for department mail, one for company mail, one for external client mail, and so on. In this way the mails will be split over different files, resulting in smaller single files.

To make a new data file go to ***File > Data File Management***. Press Add to add a new data file, then select the 'Types of storage' as Personal Folder File (*.pst), name the new PST file and press OK. You can now view the new folder. By default, it contains a Deleted Items folder. Now you need to add sub-folders to store e-mails in, and create new sorting rules that will redirect your incoming mails to this folder.



Control the PST file size with Data Management

Add holidays

Marking the holidays on your Outlook calender will make it easier for you to plan around them. Outlook does have a way to add holidays, but you will find no entry for India. To personalise it to Indian holidays, you need to modify the Outlook.txt or Outlook.hol file.

Locate the Outlook.txt or Outlook.hol file and open it using word pad. The file contains a list of holidays—



You can add holidays using the calender options

one per line, grouped by the country name. Go to the bottom of the file and add a new group name—'India' in square brackets, followed by a number, denoting the totalnumbe of entries. Finally add the names and dates of the holidays you want to mark.

It should look something like this:

[India] 3
Republic Day: 2003/01/26
Independence Day: 2003/8/15
Gandhi Jayanti: 2003/10/2

You can add as many holidays as you want, as long as you add the proper count after the square brackets. Now, go to ***Tools > Options > Calendar Options > Add Holidays***, search for the entry 'India', select it and press OK.

Add-ins

Outlook has add-ins to facilitate and automate many frequent tasks. These are easily downloadable from the Internet. Here are some of the more popular ones.

Manage attachments

Attachment add-ins help in extracting attachments from e-mails into a folder. Most add-ins remove the attachments but add a link to the file in the e-mail. An example of one such add-in is TODI. The add-in and information on how to install and use it is available at



Automatically sort your attachments in to specific folders

http://www.aufgang.org/koch/homepage/software/todi.htm

Auto print

The print add-ins are for offices that constantly require to print e-mails. Add-ins in this category print the e-mail as soon as it arrives. One such add-in can be bought at ***http://www.sperrysoftware.com***

Always inform BOSS

Some organisations pass about a large amount of correspondence in the form of e-mails. In such cases, it is mostly mandatory to mark a copy to the project or department head, so that the progress of the project can be tracked. Certain add-ins put in a default e-mail address, that is added to every e-mail that is sent, without the knowledge of the sender. One such add-in, called 'Always BCC', can be bought at ***www.sperrysoftware.com***

Time stamp

Sometimes your e-mails take hours to reach the recievers, even over an Intranet. There are add-ins that time stamp the exact time and date of when you sent an e-mail. This helps to keep an exact record of important e-mails. These add-ins can be enabled or disabled with a mouse click. You can get one such add-in from ***http://www.sperrysoftware.com/jcTimeDateSignature.asp***

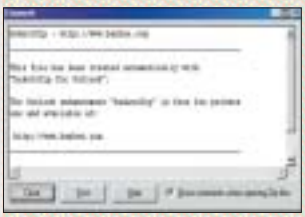
Mass mail

Mass mailing has become the new mantra of marketing gurus, add-ins that enable Mass mailing from Outlook are available. The add-ins vary in the features they provide—some just help you send e-mails, while others help you sort the responses as well. PC iMail is available at ***http://www.prosoftapps.com/pcimail.htm***. It can extract

addresses from your Outlook address book. Depending on your security settings, you may get a pop up asking for permission to carry out the operation or stop it.

Auto zip attachments

This add-in helps to reduce bandwidth requirements. Whenever you attach a file in a new e-mail, this add-in converts your attachment into a zip file reducing its file size, in turn, reducing the time taken to transfer the e-mail. One of the add-ins in this category is bxAutoZip from ***www.baxbex.com***. Before any e-mail is sent, bxAutozip compresses and zips attached files.



You can automatically Zip outgoing e-mail attachments

Reminders via e-mail

Some might wonder about the uses of e-mail reminders. They can be sent to yourself, your colleagues, subordinates, bosses, or even friends. Another advantage is that the reminders aren't limited to Outlook users, as they can be sent even to non Outlook users. This add-in is available at ***www.sperrysoftware.com***.

Access files from home

This is a unique add-in and perhaps the most exciting.



You can use e-mail reminders to organise your daily schedule

Once installed it lets you access any file remotely from your computer via e-mail. You just write an e-mail specifying the path of the file and you get a return e-mail with the file as an attachment. It takes care of the security issue by allowing you to specify the return address initially. Thus whenever a request arrives the file needed is sent to only that e-mail addtess. However, you should know the path of the file in advance, as it does not allow you to view directory structures.

Auto redirect

Not all companies have a Web-mail facility, they just provide POP3 access from com puters, within the organisation. You won't be allowed to access your e-mail from outside the company premises. In such a situation, you need a tool that redirects your e-mail to a Web-based e-mail account, which will allow you to access them from anywhere outside office. One such add-in is AutoRedirect from IvaSoft (***http://victori. hypermart.net/autoredirect.html***). This add-in creates a folder within the Inbox, called Redirect: xyz@something.com.

As soon as you restart Outlook, it will ask you for the e-mail address to which you wish to redirect your e-mails to. If you drop any e-mail into this new folder it will automatically be forwarded to the e-mail address you have set. Next, create some rules in Outlook that would drop a copy of all your mail to the redirect folder created. You can now access your e-mails through a Web-mail service.



You can redirect company e-mail to a Web mail account for easy access away from work

If the e-mails are not forwarded, you might be using Outlook in Internet Mail Only (IMO) mode. In this case you will need another add-in called redirector2002 to support AutoRedirect. This add-in is also available at the IvaSoft Web site ***http://victori.hypermart.net/redirector.html***. To check what mode Outlook is running in, go to ***Help > About Microsoft Outlook,*** the second line or text string will tell you which mode your Outlook is configured in.

Whenever an e-mail is sent Outlook might pop up a message box asking for permission to forward the e-mail. You can disable this message box by adding another add-in from IvaSoft available at ***http://www.express-soft.com/mailmate/clickyes.html***

Auto reply

Replying to each and every e-mail in your mailbox can take up a lot of time. Add-ins can be used to send pre-formatted responses, depending upon the content of the e-mail
You can configure the add-in to search for words such as resume, bio-data, etc and instruct it to send a precompiled e-mail to the sender. The add-in is available at ***http://www.nextword.com/autoReplyprod.htm***

SMS

Typing an SMS on your cell phone can cause eye strain. With this new plug-in you can SMS in the form of an e-mail, using a persons mobile number as the e-mail address. The plug-in is available at ***http://www.tamingthebeast.net/ringtones/sms-plugin.htm***. However, there is a fee applicable.



Use the auto reply to answer your mails when on vacation

EUDORA

For all you Eudora fans out there, learn how to enhance your e-mail experience



Insert recipients quickly

If you send frequent e-mails to certain addresses, then you can make use of the 'Recipient List' in Eudora for quick access to their e-mail addresses. To add a user to this list, go to ***Tools > Address Book.*** Click on the desired user and you will see the entire details for the selected user. In the Recipient List checkbox, select Yes.

Once you have added the desired users to the Recipient List, sending e-mail to them will be much easier. To do this, right click in the To, Cc or Bcc box, select 'Insert Recipient' and click on the desired user.

Remove bar while reply

Those who are irritated by the bar that appears while replying, there is some good news. There are shortcut keys to remove those bars. Select the lines from which you wish to remove the bar and press ***[Ctrl] + [Shift] + [.]***. If you need to add those bars again, select the lines and press ***[Ctrl] + [Shift] + [.]***.

Sponsored mode problem

The free version of Eudora available on the Internet is a sponsored version. Hence, sometimes you might get an error message that says Eudora could not download ads. To tackle this problem, you need to locate your Eudora folder, and go to ***eudpriv > ads*** folder. Delete all files within the ads folder, and restart Eudora. The problem will vanish.

Change mail arrival sound

You can change the sound played whenever a new mail arrives by assigning a .wav file within ***Tools > Options > Getting Attention***. Click the unnamed button, locate the .wav file, and click Open. Now, whenever you receive a mail, your choice of sound will be played.

Backing up all

Backing up your Eudora e-mails is as simple as copy-pasting. Find the Eudora folder—it's location in Windows 98 is ***c:\windows\application data\qualcomm\eudora***— select all the files with *.mbx, *.pce, *.txt and *.fol extensions. Copy the selected files to a backup storage device. The *.mbx, *.pce and *.fol files relate to e-mails, while *.txt files contain the address book.



You can customise the tune that plays when an e-mail is recieved

Delete the entire e-mail

Eudora, by default, does not delete attachments. To delete both the attachments and the e-mail, go to ***Tools > Options > Attachments***. Select the 'Delete attachments when emptying trash' option. From now on e-mails will be deleted in their entirety.



You can delete e-mails in their entirety when exiting Eudora

Drafts

Instead of typing similar e-mail body text for commonly formatted e-mails, such as responses to standard information requests, You can save general layouts of the e-mails you most commonly send. These are saved as 'Stationery' in Eudora, and are all ready to be sent later with minor last minute changes. To create new 'Stationery', go to ***Tools > Stationery***, a blank window will open up. Right click in this window and select New. In the composition window, fill as many fields as you wish, and save the stationery. Sending the e-mail is as simple as double clicking a Stationery item and making last minute changes, if any.

Mail list

Sometimes, people have more than one e-mail address. You can send an e-mail to all a persons addresses easily by creating a Mail list. To do this, when you create a user entry in the address book, you see a box stating 'This nickname will expand to the following addresses', just enter as many e-mail addresses as you want and your list is ready.

Hot chillies

Whenever you are composing an e-mail, Eudora determines your mood by checking for specific words in the message. Depending on the words and language used, it checks the degree of offensive material. Eudora gives a symbolic representation to each e-mail—1 chilly, 2 chillies or 3 chillies—to represent the type of language. As the offensiveness of



Eudora can gauge your mood when you type an e-mail

the language used increases, so does the number of chillies. To check or change the settings, go to ***Tools > Options > MoodWatch***.

Work faster

The fastest way to send e-mail is to press ***[Ctrl] + [E]*** to open the send e-mail box.

View all headers

Generally e-mail clients don't show all the header fields. To view all header fields, open the e-mail and click the 'BLAH BLAH BLAH' button.

Filter on nick

Eudora provides a different way to filter e-mails. Instead of the normal filter, using the e-mail address, Eudora allows you to filter using nicknames. In this way even if the e-mail address of the person changes, the mail will still be considered recognisable. Though, if both nick and mail Id change, it would bypass the filter. To setup a filter go to ***Tools > Filter > New***. Specify the condition, and action, and you're done.

Vacation reply

With the help of Filter and Stationery, you can configure Eudora to reply to all e-mails that arrive within a specified period. The filter acts a dummy controller—you can draft a personalised reply and whenever an e-mail arrives, during this vacation period, the personalised draft is sent as a reply to the sender.

E-mail traffic report

One of the useful features of Eudora is the graphical analysis of the amount of e-mails being handled. It shows a graphical chart for e-mails arrived, e-mails sent and Eudora usage. It shows the report for the current day and the previous day. Similarly, it also shows a weekly, monthly and yearly report.

Add-ins

Eudora has add-ins to facilitate and automate many frequent tasks. These are easily downloadable from the Internet. Here are some of the more popular ones.

Mail alert

This add-in runs as a standalone program, using Eudora's e-mail settings to poll the e-mail server at regular intervals. If it detects new e-mail

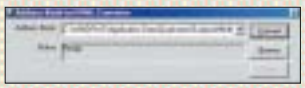


This add-in alerts you as soon as there is an e-mail on the server

at the server, then it pops up a window indicating the arrival. It also provides ways to read, reply and delete the e-mails directly from the server. The MailAlert add-in can be downloaded from ***http://www.diamondridge.com/software/mailalert/index.htm.***

Address book to HTML

You may want to publish your address book on your Web site for others to refer to. This add-in helps to export Eudora's address book to HTML format. It consists of an executable program, which needs to



You can convert your address book to HTML, in order to upload to a Web page

know the folder location of the address book. In Windows 98 the default folder is ***C:\Windows\Application Data\qualcomm\eudora***. The add-in needs 'NNdbase.txt', which contains the entire address book of Eudora. On clicking the convert button an html file is created in the same folder by the name NNdbase.htm. The add-in itself provides a way to view the converted file. This add-in is available at ***http://www.mindspring.com/~aegreene/eudora/***.



Convert your e-mails to HTML and upload to Web pages

Mail to HTML

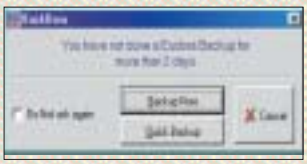
Similar to the address to HTML, is the Mail to HTML. Let's say you subscribe to a mailing list and have an interesting e-mail in your inbox, which you would like to share with others. You can upload this to a Web site, Intranet or Internet based, with just a few mouse clicks. The add-in effectively converts the entire mailbox into HTML pages. It generally finds the source folder, and you have to specify the destination folder where the HTML files will reside after conversion. Apart from this you can even convert the mails into normal text files. The plug-in is available at ***http://users.erols.com/tgitlin/***

Synchronise two PCs

If you have two computers, both running Eudora, with seperate address books. You can use this plug-in to synchronise the address book between both machines. It has an interface window where you have to select the address file, NNdbase.txt, from first computer and then the address file from second computer. A destination file that consists of a compiled address book from both machines is created. The plug-in is available at ***http://eudora.interweb.be/addins.html***

Backup

BackDora, an add-in from ajsystems.com, helps to backup Eudora e-mails and the address book. It combines important files into a compressed zip file. The add-in is available as a free download at ***http://eudora.interweb.be/addins.html***. The add-in works as a



You can backup your important e-mails and your address book

standalone application, but uses Eudora's settings. When you run BackDora for the first time, you will be requested to select the profile to backup.

EVOLUTION

Using Evolution just got simpler. Learn how to use the add-ins and tips to your advantage



Setting up LDAP

Many companies provide LDAP (Lightweight Directory Access Protocol) servers for tracking people's contact information. To configure an LDAP server in Evolution go to ***Tools > Settings***, select the 'Directory Servers' tab and click Add. You will see the LDAP configuration assistant. Click on Next and enter the server name, for example ldap.somecompany.com, and select the login type. Click Next, select the port number to use—by default it is 389—and enter the search options, if any. Select a display name, click Next and click on Finish.



You can use Evolution settings to set up an LDAP server

vFolders

vFolders are virtual folders, which can be used to receive mail using specific search criteria. This is quite similar to filters except that vFolders do not contain any e-mail—what appears in the virtual folders are just links to actual e-mails contained in the inbox. Deleting mails in vFolders does not delete them from the inbox.

To create a new virtual folder, select ***Tools > Virtual Folder Editor***. Click Add and specify the rule name, for instance, Huge Mails. Select the If criteria, for example, file size, and the vFolder sources, and click Ok.



Use vFolders in Evolution to sort e-mails virtually

Emptying trash

It is tiresome to delete mails from the inbox and then again from the Trash. A better option is to let Evolution delete the trash, when you exit. To set this option, click on ***Tools > Settings***, and select the Mail Preferences tab. Under deleting mail, check Empty trash folders on exit.



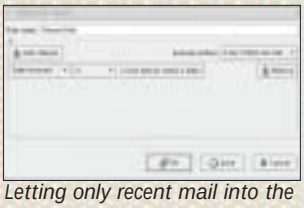
You can Empty the trash folder on exit to save time

Importing contacts from Outlook

Using Outlook, export all your contacts to a .csv file. A perl script csv2vcard.pl is provided in Evolution to convert .csv files to VCard (.vcf) files. Use the command: ***csv2vcard. pl filename.csv filename.vcf*** and import the .vcf file into Evolution using ***File > Import***. Select 'Import a single file' and click Next, then select the file type as Vcard and type in the filename. Click on the Import button and select a folder, to which the file will be imported, and click Ok to finish.

Managing recent mail

If you get annoyed by the huge e-mails lined up in your mailbox and only want recent mail, then Evolution has the perfect solution for you. You can set it to display recent mails by going to ***Search > Advanced***. Type in a rule name, such as daily mail or recent mail, select Date received under the If criteria. Click on 'Click here to select a date', and select Compare against 'A time relative to the current time'. Adjust the number of minutes, hours, days, etc., according to your preferences and click Ok.



Letting only recent mail into the mailbox

Prevent image loading

In order to prevent images from loading in Evolution, go to ***Tools > Settings***, click on the Mail Preferences tab. Here, select HTML Mail and click on 'Never load images off the Net', and click Apply/OK.



You can prevent images from loading in Evolution

Creating a new e-mail account

To create a new account, go to ***Tools >Settings*** and select Mail Accounts. Click Add, fill in the details, and select the server type—generally POP. Give the name of the POP server, such as pop.jasub-

hai.com, and your username. Make sure that the Authentication type is Password, and then click Next. Set the e-mail checking and message storage options as per your personal preferences. Select the server type (generally SMTP), type in the host name and your username. Click Next. Type the name of the account (by



Configure new accounts easily using the Account: Assistant

default it will be your e-mail ID). Click Next and then Finish to complete the account creation.

Using colour

Quoted text can be highlighted using various colours in Evolution, unlike the traditional methods of indenting quotations. Go to ***Tools >Settings*** and click on Mail Preferences. In the General tab, select 'Highlight quotations with color' and select the preferred colour.



Highlight quoted text with your choice of colours

Enable spell checking

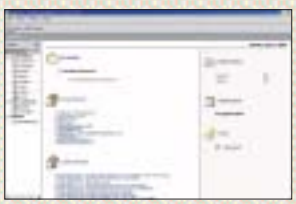
Go to Tools > Settings, select Composer Preferences and click on the Spell Checking tab. In the option section, select 'Check spelling while I type'. Adjust the colour of misspelled words and click Ok.

Adding folders to Summary

In Evolution, the Summary page displays your most important folders. By default it displays the inbox of the default account. But what if one of your accounts is equally important and deserves a place in the Summary? You can add another folder by going to ***Tools > Settings***. Click on 'Summary Preferences' and select the required folders.

Adding news feeds

The Summary page displays news feeds from many Web sites using RDF (Resource Description Format). To add news feeds, go to ***Tools > Settings***, click on Summary Preferences and then the News Feeds tab. Select from the given list of Web sites, and click on Add. To add a Web site of your own choice, other



Subscribe to news feeds using Evolution



You can add news feeds of your choice in Evolution

than those provided in the default list, click on the 'Add news feed' button, give the name and address of the Web site and click on Ok. The Web site will now appear in the list of available news feeds.

Adding emoticons

To add emoticons or smileys to messages, start composing a message and place the cursor at the required line. Then select ***Insert > Smileys*** and insert the emoticon you want. In case the emoticons don't show, go to ***Tools > Settings***,



Select the Automatically insert smiley option to customise your e-mails

click on ***Composer Preferences > General***, uncheck 'Automatically insert smiley images' and click Ok.

Open folders in a new window

Sometimes it is much better to open many folders in multiple windows so that you are not restricted to doing one thing at a time. To do this in Evolution, just right click on the folder in the folder bar and select Open in a new window. If the folder bar is not visible, select ***View > Folder Bar*** from the menu.

Default forward style

Forwarding e-mail is one of the most frequent e-mail activities. Forwarding mail can be done in a number of ways—inline, quoted, or as attachments. In Evolution, you can specify a default method. Go to ***Tools > Settings*** and click on ***Composer Preferences > General***. In the Default behavior section, select the Forward Style as Attachment, Inline or Quoted.



Set the forwarding and reply styles in Evolution settings

Composing HTML mail

Writing an e-mail in plain text can be monotonous, which is why users may prefer using HTML. Evolution provides facilities for formatting text in a variety of ways using HTML. To enable this, go to ***Tools > Settings*** and click on Composer Preferences. Select the General tab and check 'Format messages in HTML'.

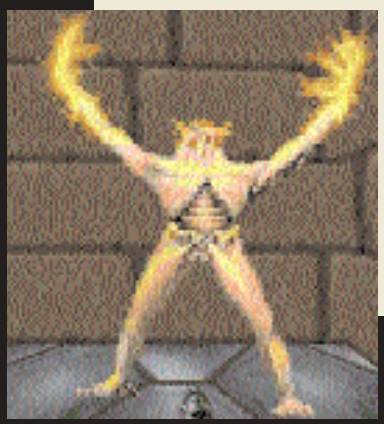
10 Monsters

THAT GAVE US NIGHTMARES

Not all monsters are created equal. Some are more equal than others… but that, as you all know, is just a platitude. What you may not know however, is that the best monsters are not necessarily the bosses that you come across at the end of a level. Some smaller demons bother you more than enough to make you remember them. Most memorable villains are the ones which simply irritate. Be it their sheer numbers, their plain attitude, or maybe just their striking looks. We've covered those monsters that gave us nightmares.

1 ArchVile (*DOOM 2*)

You've killed just about all the monsters there are, got all the keys that you can collect and are proceeding towards the exit door. Suddenly you're on fire! Confused and alarmed, you look around. You can see nothing but an unfamiliar monster standing very far off . BLAM! Your health suddenly nosedives and what's more, all the monsters you've killed so far come back to life. If you've ever been through this, you know exactly why ArchVile simply had to be on the top of this list.



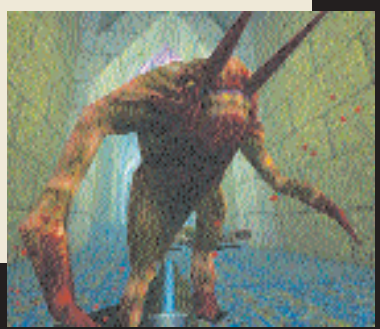
2 Headcrab (*Half-Life*)

This is one monster who's more a nuisance than terror. The first time you saw the headcrab in *Half-Life*, you probably said, "How cute". That was before it jumped into your face. A few well-aimed bullets could dispose them quickly enough, but there are two problems with headcrabs—they're everywhere, and there are lots of them. After you're past the first level, all you can think of when approaching a corner, is to switch to the handgun and look into dark corners for these vile chunks of pain.



3 Fiend (*Quake II*)

One of the fastest monsters in the game, the Fiend was the last monster in the demo levels. Lying motionless like a bat, it springs up to rip you apart. What we liked most was the in your face attack—you can see it tearing you apart as you pump lead into it. Once its beaten, all you do is keep away from it.



4 Alien (*Aliens v/s Predator*)

The alien from the movie spits acid, has no respect for gravity and is very fast—if that doesn't get it listed on our Top Ten list, nothing will. In the AVP series, the alien does look a bit human, but only if it stays still for a long time. Most of your experiences against it boil down to lonely tense moments, watching for dots on your motion sensor. Beep! A dot appears on your display and this is followed by intense moments, as you shoot the black blur above you. If you're lucky, the blur dies after inflicting you with a few wounds. The wounds heal quickly; the fear stays.



Hound (*Quake II*)

5 This was debatably the most irritating character in the *Quake* series. It hides in the dark and does some chameleon-like tongue flicking action from 15 feet away... And it doesn't die easy. The next time you see this beast, use the rocket launcher or the rail gun. At least that's what we did!



Hand (*Blood*)

6 You're doing your bit—exorcised the demons, used TNT liberally, and basically creating hell. Suddenly you notice this hand scampering towards you. Before you have time to react, it jumps at you and grips your throat. Suddenly your screen goes black as you choke in its vice like grip. Fortunately, you can shake the creature off by repeatedly pressing the spacebar, but by the time you've managed to do that amidst all the fighting, you're dead! Very, very irritating!



Shodan (*System Shock*)

7 "Look at you, Hacker. A pathetic creature of meat and bone, panting and sweating as you run through my corridors. How can you challenge a perfect, immortal machine?" Shodan was an AI construct that you create in *System Shock*, made to oversee and manage a space station. She suddenly becomes a maniac, killing everyone onboard and converting some into cyborgs. While she never actually fights with you, Shodan controls the cyborgs and the whole spaceship, which you explore. There's always a lingering sense of her watching your every move, closing in on you through all her creatures. What builds your paranoia is that she actually has a personality—strong, malicious and intelligent, she hates the fact that her creator is human.



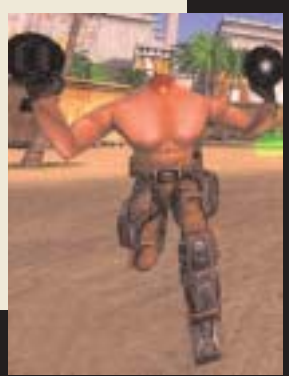
Howler (*Clive Baker's Undying*)

8 This has got to be the only monster whose absence scares you! They move in groups, bite your head off and eat it. To add to that, they howl. A lot. In fact, you hear them long before you even come across them. They're not too tough, but they move fast and attack in packs, often from different directions and at the same time. After your first encounter, every howl will make you look around frantically-with the biggest gun you've got.



Beheaded Kamikaze (*Serious Sam*)

9 These are amongst the most fun monsters in the entire FPS genre, and hear them long before you can see them. These headless zombies apparently had a prolific career as Al Qaeda suicide bombers. With two bombs in their hands, these monsters simply run into you and then blow you up. While they're easy to ward off, a dozen of them coming straight at you from all sides might be slightly more than you can handle.



Octabrain (*Duke Nukem 3D*)

10 One of the weirdest monsters in the *Duke Nukem* world, these octopus-like aliens use their psi energy to attack you. While they're easy to kill when far off, up close and personal combat requires you to dodge their psi-attacks. Get hit by one of these, and your screen blanks out for a moment. And it gets worse when they get their friends along. As the story goes, these aliens might also be responsible for all the cocooned damsels. And that makes Duke angry!



MAFIA

The City Of Lost Heaven









Play the bad guy, the good way

If you do a sideways roll while loading any gun, it —regardless of the reload time—will be loaded when you come out of the roll. Paired with the sawed-off shotgun, this tactic makes a killer combo

Bad Carma

You can ride a few hidden cars from the beginning of the Free Ride mode. These are unlocked when the game begins.

Lassiter V16 Roadster

You can find this green car at Works Quarter. It is located at the corner of the two-storey parking lot, next to a small alley (at the bottom left of the map).

Bruno Speedster 851

Found in Central Island beside the Star Hotel. Look for the 'Ferrara' banner; there will be a small alley next to the main road with a trolley. The car is on the left side of the road, when coming from Giuliano Bridge or the China Town tunnel.

Lassiter V16 Appolyon

From Corleone's hotel main doors, turn left, cross the road, then left again. On the right of the road there is an alley, where the Appolyon awaits.

Bolt Truck

Drive towards the Racing Circuit and enter the last street on the left. Follow the road and look on the right for a factory building at Works Quarter. The Bolt Truck is parked on a ramp.

Driving over Miss Daisy...

You can unlock all the Free Ride modes without having to complete the game. To do this, first play Free Ride in City, Small Mode. Go to the south-west of the Works Quarter, to a small parking lot that is unmarked on the map opposite the last tram station. Enter the alley and keep an eye out for buildings with red bricks. Here you will see four boxes stacked. Look to the east from these boxes, to spot a yellow door. Near the door and an icon will appear; right-click on it and the all modes of the Free Ride menu are unlocked!

...in case you missed her the first time

To unlock the Free Ride Extreme, you have to finish all missions. The Extreme mode allows you to get extra fancy cars (like the super fast taxi). Also, there are no cops in this mode. You can use this cheat to get the extra cars. Unlock all the Free Ride modes by either doing it the right way or by cheating as described above. Then in Free Ride Extreme, go to the extreme North East point of Oakwood. There walk southwards to see a phone box on the ride side of the road, adjacent to a house with a blue door. Near the door and an icon will appear, right-click here to unlock some hidden cars!



Steel Beasts

Too much realism

Games are getting more realistic these days, AI is more intelligent and graphics better. A well-designed game should never get too real. Good designers make games that never get so complex, that it's no longer fun to play them. Unfortunately, *Steel Beasts* is not one of them.

This game is a tank simulator. Which means you'll be put into a tank and either run over, or blow away anyone who gets in your way. Driving around a 60-ton steel box can be tank-loads of fun. However, to actually get into a battle with one of these, you'll have to sit through approximately 40 tutorials—20 for each tank i.e., the US M1A1 Abrams and the German Leopard 2A4. If that isn't enough to kill off your interest in the game, there's more to come.



CREATE AND RIDE: *Create a locale, lay your tracks and ride through the greens*

Certain aspects of the graphics are prehistoric—your tank will 'skim' over the surface of a wide river, though at reduced speed. Though, In all other respects this simulator comes close to the real thing.

You'll actually begin to appreciate the game's complexity, when you drive the tank and fire a few rounds. The chain of command and the weapon systems are very realistic. Which translates into several keys and combinations to remember.

If you choose to be the gunner, all you have to do is fire, but opting for the Tank Commander's role lands you with the responsibility of planning your platoon's strategys—which involves formations and combat tactics.

The objectives are equivalent to actual battle situations, so if you're looking to grab hold of a big gun and blow the stuffing out of your opponents, this is the last game on earth you should play. However, if you plan on buying a tank in the future, this is the perfect tool to get some lessons!

Genre: Strategy First ■ **Developer:** eSim Games ■ **Distributor:** e-Xpress Interactive Pvt Ltd ■ **Phone:** 022-28870017 ■ **Web site:** www.esimgames.com
Price: Rs 499 ■ **System requirements:** 266 MHz CPU, 32 MB RAM, 2 MB video card, 250 MB hard disk space, CD-ROM drive, Windows 9x\Me\2000, DirectX 7 ■ **Rating:** ★★½☆☆

GI Combat Episode 1: Battle of Normandy

War-weary

GI Combat is a real-time strategy tactical war-game set in the Normandy landings during World War II. The objective of the game is to control squads of infantry and armour, and defend or capture positions—depending on which side you choose to be, German or Allied.

GIC feels like an extremely watered-down version of the tactical RTS sub-genre. You only have a few tens of units at your disposal at any given time, most of whom just wait to be obliterated by the enemy.

The graphics are a sorry sight, with incredibly tiny square maps that all look alike, and only so many trees and building types to go around. The only difference between maps is the surrounding environment—grassy plains or coastlines. The awkward camera angles make it impossible to view the bottom corner of the map.



WATCH THE PIXELS BURN: *Looking down, things look pretty hot*

The turorial does not prepare you for the game, and somehow, units never seem to function properly. The German sharpshooter is the first to die, command units run away, and the enemy seems to have better aim and ability. The only saving grace are mortar teams, which kill squads from several hundred metres away, until they run out of ammunition. You have to huddle together and hope to put up a fight.

The lack of an in-game save feature is painful, and only hardcore fans of the RTS genre might find this game appealing.

Genre: Strategy First ■ **Developer:** Freedom Games Inc ■ **Distributor:** e-Xpress Interactive Pvt Ltd ■ **Phone:** 022-28870017
Web site: www.gicombat.com ■ **Price:** Rs 699 ■ **System requirements:** 600 MHz CPU, 128 MB RAM, Windows 98\2000\XP, 4x CD-ROM drive, 16 MB video card. **Rating:** ★★☆½☆☆

Geoff Crammond's Grand Prix 4

Welcome to race day

Grand Prix 4 aims at putting you on the F1 arena once again. Like its predecessors, the game offers vivid array of cars and original locales to race in. Good graphics and sound make the whole package quite interesting. Options, such as the standard Quick race, Non-championship race and Full championship, are included. But what's really worth checking out is the Quick Laps option. This mode lets up to 22 drivers take each other on for the fastest qualifying time.

The graphics are sensational, with very realistic effects—you can almost feel the water drops hitting the screen, and the debris that falls when the cars crash is also very realistic. It also sports true racing sounds—you can hear the mud churn when you miss bends, and the water pelting against your screen.



***NOW IN 3D:** The animated pit crew are a treat in action*

The AI can be pretty dumb or really cool at times. If you move outside the racing lines, the other cars just stay behind you instead of seizing the opportunity to overtake; At other times the cars will do almost anything to block your path. You can also opt for AI assists to drive your car, though with all assists on, it is actually an effort to try and crash your car. Although, racing junkies will find these assists tiresome, newbies will probably welcome them.

The replays are awesome, with perfect camera angles and placement. Watch cars overtake opponents and whiz by you. Even the pit crew are rendered in full 3D, and a sight to see when they are in full flow. The wheel controller does add to the realism, though the one we tested with didn't work well with this game.

The game is buggy, and crashes without rhyme or reason. It can be exasperating, especially if you are about to make Montoya eat your dust, and end up staring at the drab Windows desktop. Apart from this, it is a super gaming experience.

Genre: Sports simulation ■ **Developer:** Micro Prose ■ **Distributor:** Milestone Interactive Software Ltd ■ **Phone:** 022-28381614 ■ **Website:** www.grandprixgames.com ■ **Price:** Rs 699 ■ **System Requirements:** 400 MHz, 64MB RAM, 16MB DirectX 8.1compatible video Card ■ **Rating:** ★★★★☆

Labyrinth's Briefcase Microsoft Word and Excel 2002

Briefcase education

This series of books is designed as courseware for the Microsoft Office User Specialist certification program. Both the Word and Excel books that we reviewed are Level 1 beginner books, but the series goes up to Level 3. With nearly 230 pages starting from absolute basic concepts, usage and practical examples, these books are designed to bring you up to speed with the rest of the Office-literate world.

The course is divided into seven chapters, each based on a case study used to illustrate the various commands and features explained in that chapter. A chapter introduces the example scenario, and the tasks to be performed to achieve the goal. Then it begins a series of Concept Overviews followed by a hands-on to practice usage of the concept. The concepts are brief and clearly illustrated, with screenshots where appropriate. Each concept only deals with one small feature, making it short and easy to follow. The immediate follow up with a step-by-step illustrated hands-on is very useful to reinforce the new concept.



All chapters end with a series of revision sections. A simple multiple choice Concepts Review helps you identify what you forgot. A series of Skill Builders provide further practical exercise. Introducing multiple small, manageable chunks of new information followed up by immediate practical application is an effective technique for learning new concepts.

There is a liberal sprinkling of Quick Reference spots throughout the book that help highlight special interface features such as the Tab and Indent markers on the ruler or procedures such as changing the page orientation. The overall impression is that of a well thought out course presented in an easily understood and practical manner.

As a Level 1 book, the authors are quite considerate of the fact that new computer users may not be very comfortable with using menus and icons, and attempt to show rather than tell everywhere possible. The information presentation is in a refreshingly visual, easy to understand style.

If you are looking at alternatives to signing up for a computer class to get started with Microsoft Office, put *Labyrinth's Briefcase* series on your shopping checklist.

Publisher: Shroff Publishers and Distributors Pvt Ltd ■ **Author:** Brian Favro and Russel Stolins ■ **Distributor:** Computer Bookshop Pvt Ltd ■ **Phone:** 022-2317922/ 23/ 24 ■ **Fax:** 022-2623551 ■ **E-mail:** orders@cb-india.com ■ **Web site:** www.cb-india.com ■ **Price:** Rs 250 (each)
Rating: ★★★★☆

New Kids on the Block

For the last sifting step of the Talent Hunt, the aspirants were invited to visit the Jasubhai Digital Media head office in Nerul, Navi Mumbai. They spent a few days soaking in the eclectic JDM culture, sampling our canteen food (and living to tell the tale!), and not to forget, giving tests and interviews. After 72 hours of induction, we decided to export the final 16 to Synapse, our not-for-profit organisation for further training.



The group of the finalists arrive and grin a while in our lobby...



...and then get right to work: The aspirants fill in forms about their personal details.



Prashant Narekuli, brand manager of CRN briefs the new-comers on the company



Round 1: Everyone stretches their fingers to give the written test



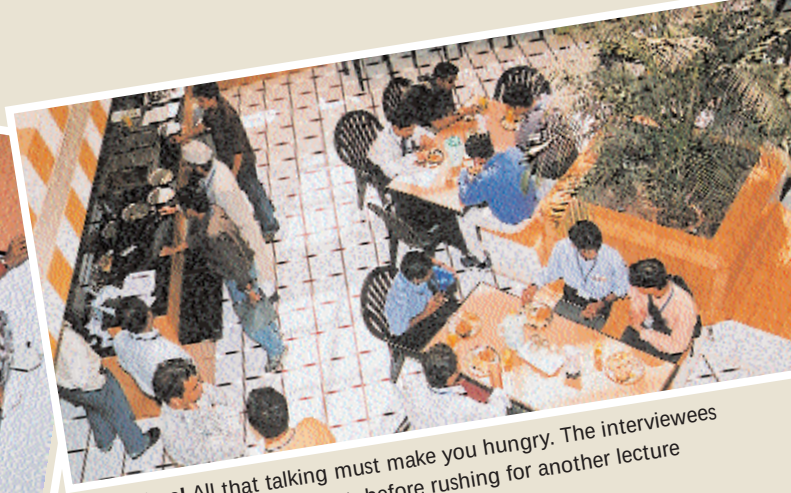
Round 2: A battle of wits is fought in the group discussions

Round 3: One on one interviews with the various team leaders





A walk around the park: Everyone is given a tour of the premises. Seen here at the TC



Chow time! All that talking must make you hungry. The interviewees gooble up some nourishment before rushing for another lecture



All out on the Table: A friendly game (but not for the loser!) of Table Tennis between the new team members and the old ones ensues in our game room



All the Kings Men: 72 hours, three levels of tests, multiple lectures... and still smiling

Oh how fast they Grow! Ready, packed and raring to go. Goa forth!



Those who made it

Vikram Malik
Delhi

Kaustubh Chaudhuri
Mumbai

Ram Mohan Rao
Mumbai

Rahul Singh
Madhya Pradesh

Gunjan Trivedi
Lucknow

Garfield D'Souza
Mumbai

Viraj Ambetkar
Mumbai

Niketu Shah
Mumbai

Bhaskar Banik
Mumbai

Kaizad Vajifdar
Mumbai

DKM Raju
Bhubaneshwar

Saurabh Kumar
Lucknow

Upendra Singhai
Mumbai

Neeraj Raje
Mumbai

Shiju Thomas
Trivandrum

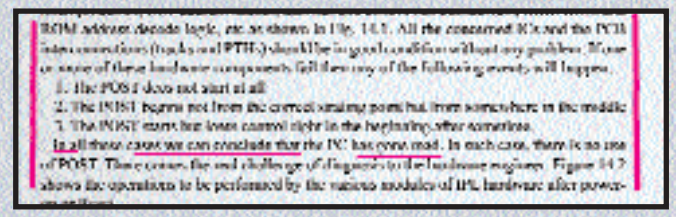
Siddharth
Lucknow



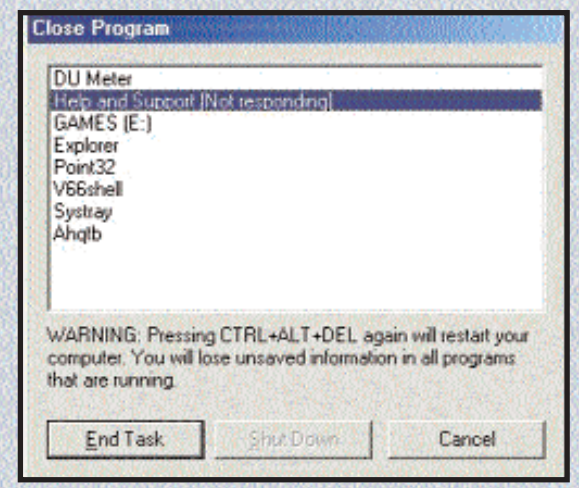
Hello, can I have a miracle please?



EEEEEKS!



Taken from *IBM PCs & Clones* by B Govindaraju, 1991
Contributed by: Kumarjit Ray





Windows on line one

What's O. J. Simpson's Internet address?
Slash, slash, backslash, slash, slash, escape

If AOL was a city...

1. You'd live in a place where no two people had the same name.
2. The commute to work is just a double-click away, but every time you try to leave your doorstep, the flow of traffic knocks you back into your yard.
3. The local post office would tell your mother that you're not a known resident.
4. If you saw a crime and called 100, they'd reply a week later with a form letter saying how you "really are important to us."
5. Whenever you travelled to other cities, people would see your license tag and laugh at you, behind your back.
6. You'd have no idea who your neighbours are. Most new arrivals would move in at night, stuff everyone's mailbox with garbage, and vacate before sun-up.
7. The administration would build a huge, state of the art park, and allow the kids to play there free, then suddenly start demanding money.

We bring you your horrorscope...



Taurus

April 20 - May 20

With Pluto entering your sign, you will experience a change in emotional ties with that battered old box you call a computer. You will realise that just willing it to work just does not compute anymore. It's time to stop being bull-headed and pull the plug, and upgrade...

Your chance to bite back!

Highlight the lighter side of computing. Mail your contributions to: Backbyte Digit, Plot D-222/2, TTC Industrial Area, MIDC, Shirvane, Nerul, Navi Mumbai 400 706 or e-mail us at backbyte@jasubhai.com